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ABSTRACT

In 1991, a project was undertaken to suggest components for an Acquired Immune Deficiency Syndrome (AIDS) education program for community college students. The project sought to identify AIDS programs and policies in place at the 17 community colleges in Maryland; assessed community college students' knowledge about the spread and prevention of AIDS, opinions about AIDS-related issues, and at-risk behavior patterns; and suggested ways in which other AIDS education programs could be developed. College administrators were contacted by letter and telephone to gather information on existing programs and policies, and 613 students responded in class to the "What I Know about the AIDS Virus" survey. After the students completed the questionnaire, the correct answers were provided, and AIDS-related literature and spermicidal condoms were distributed. Project findings included the following: (1) 8 of the 17 colleges had stated policies about AIDS, and no community college in Maryland provided a formal AIDS education program for its students; (2) both the male and female respondents knew more about the cause of AIDS than its transmission; (3) 77% of the responding students believed themselves to be very knowledgeable about AIDS; (4) students were particularly naive about the number of people infected with the disease, the costs associated with the human immunodeficiency virus (HIV) and AIDS, and the susceptibility of women to infection; and (5) many students considered AIDS more contagious than both measles and the common cold, and 41% of students held bacterial infection responsible for the virus. An extensive literature review is provided, along with survey instruments, titles of distributed pamphlets, and a description of the AIDS education program. (JMC)

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EXPERIENCING AN EPIDEMIC: THE DEVELOPMENT OF AN AIDS EDUCATION PROGRAM FOR COMMUNITY COLLEGE STUDENTS IN MARYLAND

by

Joyce T. Rochlin

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A Major Applied Research Project presented in partial fulfillment of the requirements for the degree of Doctor of Education

Nova University

May 1991

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This study could not have been accomplished without the generous support of many people. I would like to thank all of the college administrators who provided access to the classes, and the faculty members who allowed me to present this program. Without their help, this study would not have been possible.

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John Hannay, Ron Smith, and Dr. John Krick, of the AIDS Administration of Maryland were the resources for much information about the State of Maryland and AIDS. The AIDS Administration opened many doors that may otherwise have been closed. The agency's emphasis on AIDS education is intended to protect all of Maryland, and makes a special commitment to the state's young people.

To my husband and my children, I could not have done this without you. Your pride in what I do has pushed me to take just one more step, even though I would rather have been sitting down. You truly are very special people.

Finally, I would like to dedicate this project to Steve Kaufman, someone very dear to me. Steve was a beautiful little boy who grew into a wonderful young man. Steve had AIDS and died last year.

For all of you, I hope that your lives are never touched by this awful disease. I also hope that somewhere, my speeches will benefit the young people who heard what I had to say.

Abstract of a Major Applied Research Project Presented
to Nova University in Partial Fulfillment of the
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EXPERIENCING AN EPIDEMIC: THE DEVELOPMENT OF AN AIDS EDUCATION PROGRAM FOR COMMUNITY COLLEGE STUDENTS IN MARYLAND

by

Joyce T. Rochlin

May, 1991

This project was developed in cooperation with the Youth Outreach Division of the AIDS Administration of Maryland. The project was designed to suggest components for AIDS education programs for community college students in Maryland.

The data gathered for analyses were solicited from students at the seventeen community colleges in Maryland, State agencies, and public sources. Questions about AIDS programs at Maryland community colleges were answered through personal communications. Answers to the questions on the survey included reviewing research reports about AIDS, and data-based studies about the disease. Demographic

and statistical data were gathered through classroom visits and administration of the questionnaire.

The participants completed a short questionnaire entitled "What I Know About the AIDS Virus" (Rochlin, 1990a; Appendix B), in class. When the students had completed the questionnaire, the correct answers were provided and discussed. Part of the in-class discussion included the distribution of AIDS-related literature and spermicidal condoms. These materials were supplied by the Maryland Department of Health and Mental Hygiene.

Three research questions were presented to set the project's foundation. The first question centered on the AIDS programs and policies currently at the seventeen community colleges in Maryland. Only eight of the institutions had stated policies about AIDS, and none had formal programs in place.

Although there were differences in the participants' performances on the questionnaire as a function of institution attended, the reasons for these differences were not defined by this study. Institutionally, neither location, rural versus urban settings, nor the sizes of the schools would suggest any commonality for the differences between the students replies. Speculation attributed differences in the students' scores to individual, not institutionally linked sources.

The second research question addressed the students knowledge about AIDS and HIV. The students held considerable misconceptions about the spread and prevention of AIDS and HIV. These misconceptions were neither selective nor compartmentalized. The combinations of incorrect answers on the questionnaire were as varied as the students who participated in the study.

Respondents under the age of nineteen were the least knowledgeable about the spread and prevention of AIDS. White students answered more questions correctly than black students. These results support other investigators' research with college populations. There were no performance differences as a function of either marital status or gender.

The third research question was an attempt to identify self-perceived knowledge about AIDS to actual knowledge about its spread and prevention. The students were asked to rate themselves on a scale of one to ten (low versus high), on knowledge about the spread and prevention of AIDS. When the students' scores were ranked, the participants who perceived themselves more knowledgeable about AIDS were no more well informed than those who believed themselves less knowledgeable about the disease.

Practical application of this study entailed diffusion through reports presented to the Youth Outreach Division, and the participating institutions. Copies of the

questionnaire, the answers, and the references for the answers were sent to each instructor who participated in this study.

The results of the study supported recommendations for the development of other AIDS educational programs. Suggestions for new programs included, revising the questionnaire, addressing rumors about the disease, and the introduction of guest speakers. One further area for future research was suggested by this project. A follow-up procedure to track the students exposed to AIDS education programs would be a valuable resource for future programs.

This project was intended as a first-step in providing other educators with a method for conducting successful AIDS education programs. Higher education has the resources and responsibility to provide some remedy for this epidemic.

TABLE OF CONTENTS

	Page
LIST OF TABLES	ix
LIST OF FIGURES	xi
Chapter	
1. INTRODUCTION	1
Background and Significance	2
Major Issues	4
Research Questions	13
Definitions, Assumptions and Limitations	15
2. REVIEW OF RELATED LITERATURE	19
The AIDS Phenomenon	19
Responses to the Epidemic	34
Theoretical Reasons for Review	44
3. PROCEDURES AND METHODOLOGY	49
Institutional Cooperation	50
Intervention	53
The Questionnaire	53
Presentation of the Program	57
Self-Perceived Knowledge About AIDS	61
Population and Selection Procedures	61
Guidelines for Cooperating Students	62
Statistical Analyses	64
4. PRESENTATION OF RESULTS	66
Characteristics of Community College Students	66

TABLE OF CONTENTS (Cont.)

Chapter — Page

4. PRESENTATION OF RESULTS (Cont.)

Maryland Community Colleges' Programs and Policies 73

Knowledge About the Spread and Prevention of AIDS 80

Comparisons Between Self-Perceived and Actual Knowledge About AIDS 85

Intimate Behaviors and Personal Beliefs About AIDS 91

5. INTERPRETATIONS, CONCLUSIONS AND RECOMMENDATIONS 98

Interpretations 98

Research Implications and Conclusions . . 106

Implications for Higher Education 107

Synthesis and Refinement: An Improved Program of AIDS Education for Community College Students 109

Recommendations 114

Diffusion of Results 116

REFERENCES 118

APPENDICES

A. COMMUNITY COLLEGE RESOURCES 128

B. SURVEY INSTRUMENTS 132

C. TITLES OF THE PAMPHLETS DISTRIBUTED TO THE STUDENTS 136

D. PRESENTATION OF THE PROGRAM 139

BIOGRAPHICAL SKETCH 159

LIST OF TABLES

Table		Page
1.	Demographic Distribution of the Sample . . .	67
2.	Racial/Ethnic Comparisons of the Sample . . .	68
3.	Courses Included in the Survey	69
4.	Maryland Community College Credit Enrollment, 1988	74
5.	Percentage of Incorrect Answers as a Function of Geographic Location and Gender	79
6.	Analysis of Variance of Students' Incorrect Answers on the Questionnaire as a Function of Institution Attended and Gender	80
7.	Analysis of Variance of Students' Incorrect Answers on the Questionnaire as a Function of Age and Gender	81
8.	Mean Score Distributions of the Students' Incorrect Answers on the Questionnaire by Age and Gender	82
9.	Analysis of Variance of Students' Incorrect Answers on the Questionnaire as a Function of Race and Gender	82
10.	Analysis of Variance of Students' Incorrect Answers on the Questionnaire as a Function of Marital Status and Gender	83
11.	Analysis of Variance of Incorrect Answers to the Questionnaire Subsets by Gender (Male)	84
12.	Analysis of Variance of Incorrect Answers to the Questionnaire Subsets by Gender (Female)	85

LIST OF TABLES (Cont.)

Table		Page
13.	Comparisons of the Students' Incorrect Answers on the Questionnaire to Self-Perceived Knowledge About HIV and AIDS	86
14.	The Number of Incorrect Answers to Each Question on the Survey by Raw Scores and Percentage Distributions	90
15.	Percentage Distributions of the Students' Affirmative Responses to Questions About At-Risk Behaviors	91
16.	Sexual Behaviors of the Students: Percentage of Condom Use and the Number of Sexual Interactions Reported by the Students	93
17.	Percentage Distributions of the Students' Personal Beliefs and Attitudes About AIDS	94
18.	The Effect of the AIDS Epidemic on the Students' Attitudes Toward Homosexuals and Drug Users	95
19.	The Students' Sources of Information About AIDS	96

LIST OF FIGURES

Figure		Page
1.	Maryland Birth Rate Differentials for Women Between the Ages of 15 and 19	71
2.	The Percentage of Reported AIDS Cases in Maryland by Age and Gender, for January, 1990 to August, 1990	72

Chapter 1

INTRODUCTION

The purpose of this project was to identify, and help to correct, community college students' misconceptions about AIDS. The project was designed to develop an AIDS education program for community college students in Maryland. There is no present cure for AIDS and no optimism about finding one in the near future.

The project was proposed because major gaps exist in our understanding of AIDS' transmission. This lack of understanding can be found even in the most enlightened areas with the most advanced programs.

Support for accurate information about the disease was developed by reviewing the literature about AIDS. Conferences with State agency officials, individuals working with AIDS, and administrators at the state's seventeen community colleges were other sources of information. Current research findings about the etiology and epidemiology of AIDS, and responses to the epidemic, may be found in references throughout this report.

The first part of the project identified what AIDS programs and policies were in place at the seventeen community colleges in Maryland. The second part of the

project examined community college students' knowledge about the spread and prevention of AIDS. This portion of the project also identified at-risk patterns of behavior, and asked for the students' opinions about several controversial AIDS issues. Finally, the information gathered from these sources was used to suggest ways in which other AIDS education programs for community college students in Maryland could be developed.

The Carnegie Council on Policy Studies in Higher Education (1988) has suggested that barring a catastrophe, such as an epidemic, the number of people of college age could be predicted with reasonable accuracy. Based upon the current demographics of AIDS patients, this disease will have a major effect on these predictions and on the future of higher education.

Background and Significance

The impetus for this Major Applied Research Project began with work done for two pilot studies about AIDS (Rochlin, 1990a; Rochlin 1990b). The continuation of these efforts support Nova University's mission and commitment to leadership for innovation and change in education. The consequences of this disease impact upon every facet of all institutions in our educational system. As such, AIDS' influences should be recognized, investigated, and addressed.

Information about the spread and prevention of AIDS is now included in most elementary school and secondary school sex education programs. Today's college students, however, have had little access to school-based education about AIDS. When these students were exposed to sex education classes in elementary schools, precautions about sexual interaction addressed the prevention of pregnancy, traditional venereal diseases, and then herpes. With regard to AIDS, however, lack of knowledge and omnipotent attitudes can have deadly consequences.

Changes in beliefs about AIDS, and tolerance for people infected with the disease have been accomplished through educational intervention (Brown, Fritz & Barone, 1989; DiPasquale, 1990; Dommeyer, et al., 1989; Miller & Downer, 1988; Rochlin, 1990b). The results of these studies indicate that the learning outcomes of intervention were retained by the students. These studies support the value of school-based educational programs as intervening systems, and the importance of presenting accurate information about the disease.

The State of Maryland has, through its elected officials and concerned citizens, also recognized the importance of AIDS education. Maryland's current stance towards AIDS education has encouraged research, innovation and intervention ("AIDS and Maryland", 1986). The Youth Outreach Division of the Center for AIDS Administration is

part of the state's Department of Health and Mental Hygiene. This study was developed in cooperation with these agencies.

Major Issues

Although several issues about AIDS infection have been resolved, many uncertainties still surround its spread and prevention. Individuals who once believed themselves relatively safe from infection now find no immunity from AIDS' threat. Mutations in the virus have turned previously thought safe behaviors into risky ones. Furthermore, the major issues surrounding AIDS have been confounded by differential access to information, and personal perceptions about the disease.

Contradictions About Transmission

In 1981, the Centers for Disease Control reported five cases of a rare pneumonia in gay men. The commonality of this pneumonia was severe immune system impairment without obvious cause. The disease was diagnosed as Acquired Immune Deficiency Syndrome (AIDS). Since that time, remarkable strides have been made in defining and treating the disease.

However, several confounding effects about the incidence of AIDS still exist. Mutations of the virus have resulted in new AIDS cases that have not conformed to previous stereotypes. Furthermore, many virological inconsistencies and statistical uncertainties have impacted

upon predictions about AIDS (Hamburg & Fauci, 1989; Pascal, 1989; Taylor, 1989).

Contradictions about transmission, incubation periods, and the exponential growth rate of AIDS have presented interesting areas for speculation (Gardner, 1989). Information about AIDS has been subject to the censorship of political manipulations and moral perceptions.

At-Risk Behaviors

Today, the leading causes of HIV, the virus that causes AIDS, are blood products, intravenous drug use, and sexual contact. These causes have been exacerbated by tainted blood, needle sharing, and at-risk sexual behaviors.

Blood Recipients. People who give blood cannot get AIDS, unless the syringe has been infected and has not been sterilized. People who get blood can get AIDS.

Multiple cases of AIDS with no obvious risk factor other than a history of blood transfusion, were first reported in 1984. Although the risk of getting AIDS through blood transfusions has lessened, the fate of recipients of tainted blood is still to be ascertained (Perkins, 1989).

Concern over possible acquisition of AIDS following blood transfusions has caused considerable anxiety (Brady & Ng, 1987). Today, accepting public blood implies an inherent risk. Yet, Klein (1990) suggests that no major changes in the management of blood supplies should be made

without compelling evidence that transfusion safety has been impaired.

There is no compelling evidence to show that blood supplies are totally tainted. However, an individual infected with AIDS through a supposedly life-giving donation may have another perspective. This individual would have good reason to lament the safety of the blood supply, instead of commending its ratio of purity.

Blood Donors. Of all known modes of HIV infection, most progress has been made in preventing transmission through blood and blood products (Selik & Curran, 1988). However, intravenous drug users still pose a serious health threat to the nation's blood supply.

Chitwood, et al., (1989) report that in spite of attempts to dissuade them, intravenous drug users continue to sell or donate blood, and that almost half of these donors had sold or donated blood before 1985. In 1985, HIV screening in blood banks was initiated. Although it is not known how much of the pre-1985 blood was actually distributed, its availability has created a higher risk for HIV infection.

Because blood products have been so highly correlated with AIDS' transmission, many protective measures have been instituted to reduce its spread. Needle changing is commonly assumed to eliminate cross-contamination. New research, however, has indicated an alarming prospect about

the effect of needle-changing on the contamination of syringes.

Trepanier, et al., (1990) report that even if needles are changed, thirty-four percent of the syringes will test positive for blood. These investigators concluded that intravenous tubings have a significant potential for infection, and that the presence of a check-valve does not affect this contamination rate.

Although the contamination rate decreased as the distance from the intravenous catheter increased, simply changing the needle would not guarantee prevention of cross-contamination. The findings of Trepanier, et al., have important implications for blood donors and health care workers. Using a disposable needle is no guarantee that the syringe has not been infected.

Intravenous Drug Use. The AIDS virus does not thrive in heroin. AIDS is not passed on by the drug, but by the paraphernalia of the drug user and the practice of sharing needles for intravenous drug use. If the original user was infected with AIDS or HIV, the next user is vulnerable to infection. Hahn, et al. (1989) estimate that as much as one-third of the intravenous drug use population are now HIV infected.

Gagnon (1989) points out that intravenous drug users usually have conventional social relationships in which they spend a good part of their lives. Furthermore, the use of

sex has become a ready currency in exchange for addictive drugs. Therefore, the combination of an addicted individual's potential for infection, and his or her sexual interactions, have contributed to the spread of HIV. This transmission has not been limited to the at-risk populations in which it originates.

Ron and Rogers (1989) suggest that the key to the future of the HIV epidemic will be the intravenous drug user. Although the correlations between AIDS and intravenous drug use have lowered, efforts directed toward this group must be continued. Ron and Rogers suggest that instead of resting on good results, programs directed toward at-risk populations and at-risk behaviors should be increased.

Sexual Intimacy. Research has shown that students' perceived norms for safe sexual practices are inconsistent and dangerous (Nader, et al., 1989). These omnipotent attitudes about personal vulnerability and personal responsibility can have deadly consequences for young adults and their partners.

Each partner in an intimate relationship has the responsibly for his or her own protection. This protection should include the use of proper prophylactic measures and some knowledge of one's partner's background. Prophylactic measures can be easily implemented. However, the intimacy

of the moment many not be conducive to honest or forthright disclosures about other experiences.

Wheeler (1990) found that many college students put their partners at risk by lying about their past sexual experiences. In Wheeler's study 186 of the 422 sexually active respondents admitted telling a lie in order to have sex. Seventy-eight percent of the respondents believed that never telling a partner about sexual infidelities was acceptable behavior.

Risky sexual behaviors, particularly anal sex, and vaginal intercourse among nondiscriminating partners, have also been primary conduits for the spread of HIV. Today, the commonly accepted descriptions of safe sex support heterosexual relationships, monogamous unions, and the use of condoms for protection. Prophylactic measures, however, are no guarantee that HIV will be prevented.

While most individuals understand the importance of protection, very few people are actually using protective measures to prevent sexually transmitted diseases (Sonnex, et al., 1989; Strader & Beaman, 1989). Negative attitudes toward the use of condoms have indicated the need for influencing normative beliefs to change behavior. These attitudes may be the single most important cause for concern in stopping the spread of AIDS.

In a recent study about sexual behaviors, Thomas, Gilliam and Iwrey (1989) found that seventeen percent of the

students surveyed had participated in anal intercourse. Thirty-three percent of the students had been exposed to more than one sexual partner. Over six percent of the students had used heroin, and sixteen percent had been treated for a sexually transmitted disease.

Thomas, Gilliam and Iwrey suggest that health education programs should focus attention on risk behaviors instead of risk groups. In their study, risk behaviors were directly related to the perceptions of the students. The students who had less knowledge about the spread and prevention of AIDS were engaging in riskier behaviors. The students who were well informed about AIDS were protecting themselves.

A Kiss Can Be Lethal. The likelihood of being infected with HIV through salivary transmission has been publicized as insignificant. Although other behaviors may have stronger relationships to HIV acquisition, salivary transmission should not be ignored. Several recent studies implicate salivary and oral transmission routes for HIV infection (Kaslow & Francis, 1989; Levy, Ferro, Greenspan & Lennette, 1990). Pamphlets distributed by The American National Red Cross (1988a, 1988b) also address the possibility of HIV transmission through kissing and oral sex.

In 1991, a federal investigation found that an AIDS infected Florida dentist had passed the same HIV strains of the disease to three patients (Cimons, 1991). None of the

three patients had independent risk factors for HIV infection. Current suspicions about the route of transmission lie with the role of contaminated equipment as the possible source of infection. It is now speculated that the equipment was contaminated after the dentist worked on his own teeth, then used the same equipment in the mouths of his other patients.

Differential Access to Information

Osborn (1989) states that the government has been nearly refractory in its response to calls for concrete messages about AIDS. Other countries began distribution of general information within months of AIDS' identification. The United States responded seven years after the onset of the epidemic.

This federal delay was based on the premise that public health was within local and state government domains. Although many local initiatives have been successful, the resources available to all states are not the same. This differential access to funding has created unequal access to information about the spread and prevention of AIDS.

Access to accurate information, however, does not guarantee that the message will be internalized or applied to risky behaviors. Furthermore, access to accurate information about AIDS' transmission does not reduce anxiety about contact with infected individuals (Crawford, 1990).

AIDS is not passed through common social interaction, yet it is perceived as a social disease.

Perceptions About AIDS

In a recent survey, the Field Institute in San Francisco found that the respondents held rampant misconceptions about AIDS' transmission (FNP Health Report, 1989a). The importance of these results were, that in an area considered to offer some of the most sophisticated educational programs in the country, most respondents still held stereotypical beliefs about AIDS' transmission. It is not surprising then, that in areas where intimate issues are not addressed, considerable misconceptions surround the spread and prevention of AIDS.

Sheehan, Lennon and McDevitt (1989) found that, when compared to other illness, AIDS patients were reacted to least positively. These researchers also found that negative attitudes affected the willingness of most people to interact with people afflicted with AIDS.

The AIDS epidemic has been accompanied by intensely negative public reactions to persons presumed to be infected with the disease. Herek and Glunt (1988) suggest that the development of an AIDS-related stigma may be an epidemic in itself.

Several studies have shown that most students do not consider AIDS an epidemic or a personal health threat (Mangan, 1988; Sy, et al., 1989). These studies suggest

that more creative and personal AIDS education strategies should be directed toward this at-risk population. A recurring theme running through the literature about AIDS, is that education is the only available vaccine. Young people must warned to protect themselves, and education must sound the alarm.

Research Questions

Three research questions for this study were combined to identify current AIDS programs, and community college students' knowledge about the spread and prevention of the disease. These questions were addressed to present alternatives to programs to disseminate AIDS information to community college students in Maryland.

The first question was concerned with Maryland community colleges' responses to the AIDS epidemic. The second question allowed for an examination of community college students' knowledge about AIDS, and compared this knowledge to the demographic characteristics of the students. The third question was used to compare the students' scores on the questionnaires to their self-perceived knowledge about AIDS.

In 1989, the Federal Government was expected to spend 260 million dollars on AIDS Education (FNP Health Report, 1988). It was predicted that the minimum average rate of increase for AIDS education would be thirty percent. By

1991, the State of California will spend 743 million dollars on AIDS education (Seidman, 1989).

In 1987, the proposed funds allotted for AIDS education in Maryland were approximately one million dollars. For the fiscal year 1990, the State of Maryland will have spent over six million dollars on these same services ("AIDS and Maryland", 1986).

In 1985, the American College Health Association issued a general statement on institutional response to AIDS. This association stated that the primary response of colleges and universities to the AIDS epidemic must be education, and recommended that AIDS education be made available to everyone involved in institutions of higher education.

> Research Question One: What AIDS education programs are now in place at the seventeen community colleges in Maryland?

Helgerson and Petersen (1988) found that students who had any knowledge about the disease, gathered this information from media sources. They were also able to show that students want to learn more about the AIDS virus. Unfortunately, our educational systems are not providing the kind of learning students want, or need.

> Research Question Two: What do community college students know about the spread and prevention of AIDS?

Today, most people operate on a continuum of absolute paranoia to omnipotent naivete about AIDS. In addition, for many who do seem to understand AIDS' epidemiology, this

knowledge is rooted in misconceptions. The third research question was an attempt to compare factual information about the disease to the fictional beliefs held by the students.

> Research Question Three: How accurate are self-perceived levels of knowledge about AIDS, as compared to the actual information held by the respondents?

Several assumptions about the participants in the project and its design should be recognized. Limiting aspects about the disease, and definitions about the data collection also require notice and clarification.

Definitions, Assumptions, and Limitations

For this study, misconceptions about the disease were operationally defined as incorrect answers to the questions presented on the questionnaire. It was assumed that if the respondent was well informed, the question would have been answered correctly. A full explanation of the data collection and interpretation is presented in Chapter 3.

Etiology and Epidemiology: The words etiology and epidemiology were used throughout this report for descriptive purposes. Etiology is commonly accepted to mean the cause, and epidemiology defines the spread of disease.

Entry-Level Courses: For the purposes of this study, an entry-level course was operationally defined as any course commonly accepted to have first-level status, for which college credit is awarded. Numerically, an

entry-level course would be a class to which the college has assigned a number between 001 and 199.

Assumptions

The only commonality between the students in this study was their presence in the classroom. The students were not matched on any level in advance of the project, nor drawn in ways to constitute a statistically defined sample. However, it was assumed that the participants reached were a sufficiently representative sample of the populations at the seventeen community colleges in Maryland.

It was also assumed that the sample surveyed would support efforts toward the development of suggestions for educational programs about AIDS. Although some steps were taken to test the validity of this assumption, any generalizations about the results of this project and the applicability of the educational program proposed, can only be directed to community college students in Maryland. The sample size and the demographic characteristics of the students who participated in this program are discussed in Chapter 4.

Furthermore, while the students may have been willing to respond to the questionnaire, their answers may have been nothing more than good or bad guesses. Because the answers were collected anonymously, they were presumed to be an honest assessment of the students' current knowledge about the AIDS virus.

In any study, however, the experiences of the respondents, and fortuitous factors for question selection, must be considered. Some respondents may have known more about AIDS through personal experiences with the disease.

Limitations

The intent of this study was to investigate community college students' conceptions and misconceptions about the AIDS virus. However, because of the restrictive nature of the data being examined, and its evolutionary processes, the reliability and validity of the survey will always be questionable.

Inconsistencies surrounding the AIDS virus have confounded empirical research. At best, predictions and generalizations about AIDS are only theoretical models limited to changing concepts about the disease.

Because a considerable portion of this project relied on intermediate agents, several intervening effects should be recognized.

1. The sequential steps required for admission into the colleges required contact filtered through a variety of sources (Appendix A).

2. Each participating faculty member had provided different explanations for the program before its presentation. Therefore, different classes may have had different expectations for the survey.

3. The students' commitments to the project may not have been associated with altruistic motives. Although the students participated willingly in the project, missing a class may have been more of an incentive than learning about AIDS.

4. More than half of the colleges did not respond to requests for information about AIDS programs and policies.

Finally, because of the vagaries of the disease, and its impact upon society, the scientific and social disciplines have responded in an unprecedented manner. In addition, several publications specifically devoted to AIDS research have evolved. As a result, the literature about AIDS and HIV, the virus that causes it, is extensive.

Although the literature to support this project was reviewed on an ongoing basis, information about AIDS becomes dated very quickly. Current findings about the major issues addressed by this study are included in the following chapter of this report.

Chapter 2

REVIEW OF RELATED LITERATURE

The literature review for this study was organized around two major themes. These subsets addressed the AIDS phenomenon and responses to the epidemic.

The research reviewed about the AIDS phenomenon was matched to the questions on the survey instrument presented to the students (Appendix B). Limiting the review to the questions addressed by the survey was an attempt to reduce, and present, a plethora of information in an orderly way. This format also provided for a selective overview of the available information about AIDS.

Institutional response to AIDS has also created an interesting paradox. Institutions where the first response to the epidemic would be expected, have been the last ones to respond.

The AIDS Phenomenon

It is now believed that HIV was introduced into the United States in the early 1970's, eleven years before the first reported case of the disease ("AIDS and Maryland", 1986). The disease is an irreversible immune system

dysfunction that encourages opportunistic infections and rare malignancies.

AIDS evolves through two phases of infection, Human Immunodeficiency Virus (HIV), and AIDS Related Complex (ARC). HIV is the virus that causes AIDS, and ARC signals the onset of immune system impairment. The occurrence of AIDS is the final manifestation of HIV' progression. Once AIDS is diagnosed, the average life expectancy of an infected adult is one year.

HIV's threat is compounded by two effects. First, the length of time HIV lies dormant in the infected individual contributes to the potential for infection to those with whom he or she interacts. Next, unless one has specific cause to suspect infection and is tested for HIV, he or she would be completely unaware of being infected.

Furthermore, a recent negative blood test is not proof that a person is not an HIV carrier. The human body needs approximately three to six months to make antibodies. A person incubating HIV within this period would not test positive for the disease.

The Etiology of AIDS

AIDS is acquired. It is not inherited, nor does it spread by travelling trough the air. AIDS is not caused by parasitic invasions. Unlike measles or the common cold, AIDS is not transmitted through casual contact. AIDS creates an immune system deficiency that the body cannot

repair. The virus is a combination of symptoms in this syndrome (Metropolitan Life Insurance Company, 1981).

Symptoms

The Centers for Disease Control reports that a person can be infected with AIDS without showing any symptoms (United States Department of Health and Human Services, 1988). Infected individuals can feel fine, look fine, and unless tested, can be completely unaware of being infected.

Once symptoms do appear, they are similar to symptoms of other diseases. Clinical manifestations of the AIDS virus may present no symptoms and apparent health, or severe symptoms and rapid death from one or more lethal tumors or infections (Masur & Fauci, 1989).

The Epidemiology of AIDS

It is now estimated there will be 365,000 AIDS patients in the United States by 1992 (Kean, 1989). To date, 250,000 people have died or about to die because of AIDS. As Kean (1989) points out, this disease has already had an enormous effect on society. It should also be noted that these statistical inferences are for people already infected with the AIDS virus and do not include HIV carriers.

It has also been reported that the disease is doubling about once every two years (Zeger, See & Diggle, 1989). These projections may be optimistic inferences. When Dondero, et al., (1989) compared the population prevalences

of AIDS to empirical HIV data, they projected over one million total infections in the United States.

In 1986, Maryland's health planners estimated there would be 3,700 reported cases of AIDS by the end of 1991. By 1991, more then four thousand of Maryland's AIDS-infected citizens will have died. For the same year, the State also projected that 171,000 individuals in Maryland will be HIV seropositive (Maryland Department of Health and Mental Hygiene, 1987).

The Centers for Disease Control associates HIV with blood, semen, saliva, tears, breast milk, and urine (Selik & Curran, 1988). Although implications for infection are also dependent upon the recipient of these secretions and excretions, different modes of HIV transmission continue to surface.

Sexual Modes of Transmission

AIDS is transmitted through sexual intercourse. Neither exclusivity nor abstinence is a sure way of preventing AIDS. Furthermore, transmission probability is not necessarily related to the actual number of sexual contacts, but to a constant for partnerships of a given kind (May, Anderson and Blower, 1989). Therefore, without precise knowledge about serological status, ten sexual acts with one partner would carry the same risk as one sexual act with each of ten partners.

Having sex with only one partner at a time is not the same as exclusive interactions with one noninfected partner. The idiom that a person is sleeping with everyone his or her partner has every slept with, accurately describes the potentially deadly consequences associated with selecting a sexual partner.

For some young people, however, definitions about monogamy may be related more to the relationship than the life span. Selective monogamy should not be confused with lifelong monogamous relationships. Being monogamous this year with a current partner, then next year with another, is not the same as being monogamous with only one partner.

Although abstinence would be a sure way of preventing AIDS through intimate contact, it is not a sure way of preventing AIDS. The roles of intravenous drug use, blood exchanges, and lack of knowledge about at-risk behaviors are all equally responsible for the spread of AIDS and HIV.

Protection and Prevention

MacDonald, et al., (1990) state that the current sexually transmitted disease epidemic has increased concern about the potential for the spread of HIV. In a survey of over five thousand first-year college students, MacDonald, et al., found that while most of the respondents were sexually active, very few always used a condom.

In a study of sexually active young men between the ages of fifteen and nineteen, Sonenstein, Pleck and Ku

(1989) found that slightly more than half had used a condom. Although these results indicated that the rates of condom use were increasing, many people are unaware that not all condoms offer equal protection. A natural condom offers almost no protection against HIV infection. A latex condom used with a spermicidal gel offers the best protection against HIV transmission.

Attitudes about condom use support suggestions for redefining and expanding the contributions that teachers can make (Basch, 1989; Crawford, 1990). Specifically, educational programs must be directed toward the proper use of, and the differences between effective and ineffective protection (Weisman, et al., 1989).

Personal Responsibility

In a random sample of 294 undergraduates, Thurman and Franklin (1990) found that most students were reasonably well-informed about AIDS. These students were aware of the recommended precautions about AIDS and fearful that the virus might spread. Thurman and Franklin's data also disclosed an interesting paradox. Even though the students were aware of the health threat AIDS posed, they were reluctant to change their sexual behaviors. Unless the threat of infection was personalized, most students believed themselves to be immune to infection.

Manning, Balsom, Barenberg and Moore (1989) also found that students' beliefs about practicing safer sex depended

upon their knowledge about the AIDS virus. Students who knew little about the disease perceived higher barriers to safe sex, were less careful about at-risk behaviors, and more cavalier about their sexual interactions.

At-Risk Populations

Because of AIDS' association with marginalized groups, most people believe that AIDS is a lethal and transmittable disease only for at-risk groups. Strong correlations between the spread of AIDS, ethnic minorities, and intravenous drug users have been shown (Hopkins, 1987; Schilling, et al., 1989). However, the disease is by no means limited to these populations.

Adolescents and AIDS. Sonenstein, Pleck and Ku (1989) suggest that teenagers may be especially vulnerable to the threats of AIDS. Although the numbers of teenage AIDS cases are less then one percent of all cases, these percentages are misleading (Johnson, 1988).

Twenty-one percent of all persons with AIDS are between the ages of twenty and twenty-nine. It is now estimated that ten years can elapse between infection and the manifestation of symptoms. Simple mathematics would reveal that the infections of the older individuals had to have occurred in their teenage years.

The National AIDS Network (1989) has suggested that the relatively low number of adolescent cases does not reflect the current transmission of HIV among teens. It does,

however, predict frightening possibilities. George Wirt, of Covenant House in New York City summarizes the implications of AIDS' dormancy.

> You're looking at potentially hundreds if not thousands of young people who eventually are going to come down with AIDS. It's a timebomb waiting to go off. Its a tragic situation to see young people die for any reason, but particularly for a reason that can be prevented (NAN Multi-Cultural Notes, 1989:1,4).

Concern has been rising about the number of adolescent HIV carriers. Steiner, et al., (1990) found that although adolescents' knowledge about AIDS has increased dramatically, their attitudes and beliefs have not been radically altered.

Rumors and misinformation have also contributed to young people's misconceptions about AIDS. One common misconception is the spread of AIDS through insect bites. AIDS is not spread by mosquito bites, bed bugs, lice, flies or other insects (Koop, 1988).

College Students. The Centers for Disease Control indicates that two out of every thousand college blood samples tested are infected with HIV (Keeling, 1989). Although many educational programs about the disease have been initiated, these attempts have been ambivalent, inadequate and ineffective (Mangan, 1988). Most programs have placed emphases on sexual abstinence and the risks of intravenous drug use.

Denying the existence of sexual activity and recreational drug use ignores the realities of adolescent biological changes, peer pressure and curiosity. Several investigators have suggested that instead of telling participants not to engage in risky behavior, education for protection when engaging in risky behaviors, should be emphasized. The identification and outcomes of these programs are discussed in the responses to the epidemic presented in this report.

In a recent survey, 975 university undergraduates were asked about the spread and prevention of AIDS (Thomas, Gilliam & Iwrey, 1989). The students' lack of knowledge about the disease, and their attitudes toward at-risk behaviors, support other studies with adolescents and college-age respondents.

In 1989, Nader, et al., surveyed students about their perceptions of personal vulnerability and responsibility in the spread and prevention of AIDS. The Nader study disclosed an interesting paradox. The older, presumably more sexually active students perceived AIDS less as a personal threat, and reported lower ratings for safe sex practices.

Several implications for education were suggested by this study. Nader, et al., pointed to the necessity for designing programs directed toward subculture peer groups. These investigators also felt that students should be

educated about the reality of their vulnerability to AIDS. Perhaps most important, students should be taught specific skills to prevent AIDS infection, and should be aware of the ways in which the spread of AIDS is prevented.

Hernandez and Smith (1990) suggest that the risk of HIV infection for college students is increased by exploratory behavior, the need for social approval, and a sense of invulnerability. The amount of unsafe sex taking place on college campuses may also be masked through self-reports about dating patterns and HIV risk behaviors.

Hernandez and Smith believe that inaccurate self-perceptions about monogamy and abstinence may lead to the false assumption that one is safe from sexually transmitted diseases. The results of this study also highlighted the amounts of unprotected sexual behavior among college students. Hernandez and Smith emphasized the need for educating college students about the roles of planning and spontaneity in dating patterns, as related to the risk of HIV infection.

Women and AIDS. Osborn (1989) reports that in contrast to the ratio for AIDS cases, HIV antibody prevalence studies show some alarming changes for infected women. Osborn found that the national infection ratio for HIV was only three males to one female. Osborn also found that the virus was equally present in some male and female populations in high risk areas. In Maryland, more women then men have been

diagnosed HIV positive since January, 1990 (Maryland Department of Health and Mental Hygiene, 1990).

In the adult population, females account for nine percent of all cases. Adolescent girls now account for nineteen percent of the total teenage cases. The National AIDS Network (1989) reports that adolescent girls now appear to be more at risk than their male peers.

As the number of HIV infected women continues to grow, so do the chances for producing HIV infected babies. Women who know they are HIV infected and still choose to have children, have puzzled social science researchers (Moses, 1989). More than forty percent of HIV positive, pregnant women will pass the disease on to their children. Most cases of AIDS in children represent perinatal transmission of HIV (Jaffe, 1990).

Right-to-life groups, pro-choice groups, and groups advocating the rights of the fetus have tried to manipulate AIDS-related legislation. The conflicting perspectives of these groups, combined with unique personal decisions, have contributed to confound the problem of HIV perinatal transmission. Whether the mother's individual rights supersedes the rights of the unborn child, is a dilemma requiring resolution.

The rate of infection for Black women is now nine times that for White women (Chu, Buehler and Berkelman, 1990). Chu, et al., predict that by 1991, AIDS will be one of the

five leading causes of death for women of reproductive ages. Infected women are the source of infection for infants. As Chu, et al., point out, trends in AIDS mortality in women forecast the impact of HIV on morality in children as well.

Race/Ethnic Group. Blacks and Hispanics are not more susceptible to AIDS. However, AIDS has been disproportionately affecting the nonwhite population. Racial skews have been supported by several effects. Socioeconomic background, lack of knowledge about the spread and prevention of AIDS, and the greater number of at-risk behaviors practiced, have all contributed to the vulnerability of these populations.

In a recent study, Gayle, Selik and Chu (1990) found that most incidents of HIV and AIDS among children and women of childbearing age were within Black and Hispanic populations. These investigators believe that new programs must be directed to the needs of Black and Hispanic women, and their children. Gayle, Selik and Chu also believe the prevention and treatment of drug abuse should be an integral part of HIV programs.

Health Care Workers. Hospitals are not required to protect health care workers. Clavreul (1989) found, that in nearly all clinical settings investigated, no adequate, formal programs detailed the risk of AIDS to staff. Procedures for using masks, gloves and gowns were poorly

defined, and precautionary measures were taken only when caring for an AIDS-identified patient.

Neither physicians nor health care workers have special immunities for the disease (Herbert, 1990). Current estimates link 469 physicians and 2,586 health care workers to AIDS infection (Fauci, 1988).

Homosexual Transmission. Most homosexuals do not have AIDS. However, because of AIDS' association with this group, homosexuals have been the primary target of the suspicions and prejudices of the heterosexual population.

Holding onto the belief that stereotypical groups are the epidemic's primary targets grossly underestimates AIDS' infiltration in society. AIDS can no longer be perceived as a disease related to homosexuality (Bakeman, Lumb & Smith, 1986; Mann, 1988; Wellings, 1987). Today, most minority males who have AIDS are heterosexual.

In minority populations, heterosexual transmission of AIDS is almost equal to the combination of homosexual and intravenous drug use transmission rates for whites (United States Department of Health and Human Services, 1990). The appearance of more heterosexual than homosexual/bisexual cases of AIDS is now the predicted epidemiology of the disease (Horman, Israel & Van Blerk, 1990)

During the 1950's, the social, psychological, and cultural world of homosexuality was transformed (Gagnon, 1989). As the numbers of homosexual partners increased, the

incidence, frequency, and reciprocity of anal sex also increased.

In the early stages of the AIDS epidemic, the recognition of its dangers were muted by the homosexual population's personal and political liberation. For some groups, safe sex was perceived as a repudiation of the philosophies of being openly homosexual. For some, it was also seen as an attempt by the heterosexual community to impose its constructs on a dissimilar population.

Not all homosexuals, however, remained homosexual. The spread of HIV was increased between the homosexual and heterosexual populations through bisexuality. Gagnon suggests that bisexuality poses a serious problem for AIDS researchers. Because bisexuality transcends all categories, no singular model of transmission can be developed.

Financial Implications

The financial costs of AIDS are prohibitive. Initial estimates by the Centers for Disease Control fixed lifetime treatment costs at $147,000 per AIDS patient (Green, et al., 1989). One year later, these estimates were lowered to the $40,000 to $50,000 range. Although the initial projections overestimated the costs of AIDS treatment, the new estimates for AIDS' associated costs may also be inaccurate.

Medical costs for AIDS patients are not limited to physicians, drugs, laboratory tests or hospital stays. Costs associated with being infected with AIDS also include

social services and at-home nursing care. A family member with AIDS or HIV depletes the family funds. AIDS destroys the family emotionally, and robs society of its most economically productive members.

Government supplements and third-party coverage for the disease's associated costs are mandatory (Benge, et al., 1989). Yet, a large segment of our population believe that the medical costs associated with HIV and AIDS infection should be born by the infected person.

The total medical costs of AIDS and ARC have been estimated to be two to four billion dollars annually (Hay, Osmond & Jacobson, 1988). These costs have risen primarily due to the costs of AZT, the leading drug resource for AIDS patients. Although government contributions are now being made available toward the cost of being an AZT recipient, bureaucratic delays have interfered with speedy payment.

It has also been suggested that the level of federal spending on specific diseases should compare to the costs each disease exacts from society. Cordes (1990) found that some researchers believe the amount of money targeted for AIDS research has been compromising other, equally important projects. Yet, as Cordes points out, without financial incentives and support, fewer investigators might want to work with a potentially lethal virus.

Compulsory Testing

Bayer, Levine and Wolf (1986) suggest that stopping the spread of HIV infection is linked to the voluntary cooperation of those at risk. This cooperation would include voluntary testing. However, both voluntary and mandatory testing are sensitive issues influenced by psychological denial and societal stigma.

As the AIDS epidemic continues to claim lives, the issues of testing and confidentiality have generated considerable debate (Lo, 1990). Testing creates a legal conflict between an individual's right to autonomy and society's right to control the public health (Uzych, 1990).

Uzych calls for better laws to define what society has the right to know and what rights its members have to privacy. Uzych believes that appropriate statutes should recognize there are times when disclosing otherwise confidential reports may be legitimate.

Tintinger and Simkins (1989) found that homosexual and bisexual individuals have been less supportive of mandatory testing than heterosexual ones. Heterosexual respondents supported mandatory testing for everyone, and homosexuals in particular.

Responses to the Epidemic

AIDS education has been particularly susceptible to moral and religious issues. For example, Catholic parents

in Boston have been urged not to allow their children to participate in AIDS education programs (FNP Health Report, 1989c).

The rationale for not presenting these programs has been, that by acknowledging permissive sexual behavior, the participants' risk of getting AIDS is increased. Although many schools and parents disagree with this position, a like number support censorship of sex education.

State agencies and special interest groups have also responded to AIDS through education. For some students, the information provided by these sources has been more effective than the information provided by higher education.

AIDS and Education

Although educational programs do increase knowledge and positive attitudes, they do not appear to affect attitudes about practicing preventive behaviors (Huszti, Clopton & Mason, 1989; Lohrmann, 1988). Because most educational programs pay more attention to AIDS' clinical aspects then its psychosocial issues, even when facts are assimilated, attitudinal changes are not internalized. Ziffler and Ziffler (1989) suggest that educational programs should be directed toward more ethically responsible and compassionate attitudes.

Ostrow (1989) believes that behavior is also influenced by sources other than accurate information. Ostrow suggest

several concepts that programs designed for educational intervention should address.

1. Knowledge about risky behaviors often motivate their change. The first step in changing risky behavior would be knowing that the behavior is risky.

2. Perceived susceptibility to infection is a better predictor of future behavior then knowledge alone.

3. Individuals weigh benefits and costs. Individuals must believe that changes are beneficial.

4. Sociodemographic variables have been related to HIV infection. The geographic saturation of HIV positivity is further complicated by cohort membership.

5. Alcohol and other drug use interferes with safe sex practices.

6. Social affiliations and peer support are especially important for behavior changes that require cooperation.

Since 1987, Columbia University has presented an AIDS conference for people infected with AIDS or HIV (Biemiller, 1989). The organizations's effectiveness has been shown through the services it offers and the information that it provides.

Although intended primarily for an audience outside the university, Columbia is now seeing a significant part of its own population dealing with the disease. The success of this program supports the use of multidisciplinary intervention strategies as suggested by Allensworth and Symons (1989).

Many investigators believe that to be effective, new programs must be developed (Beimiller, 1987; Mangan, 1988).

Biemiller suggests that AIDS education should be aimed at changing behavior and should be repeated in different formats. Biemiller also points to an unfortunate paradox. The more effective a program is, the more controversial it tends to be. Effective programs admit there is sexual exploration by young people.

Gagnon (1989) suggests that while education for young people who are out of school can be explicit, this group is hard to reach. Furthermore, AIDS education for college students has been sporadic. It is neither required as part of any college curriculum, nor provided as a matter of course. Gagnon also suggests that the impact of AIDS will do little to change the sexual behaviors of adolescents and young adults.

> Young people are far more influenced by each other and by the sexual practices current in their environment than they are by what adults tell them.

Encouraging young people to use condoms does not increase condom use. Gagnon's conclusions would seem more realistic than those who proselytize global programs.

AIDS education can propose, enlighten, show and project. Education cannot make the recipient internalize the information, nor can it overcome peer pressure. Education about AIDS is subservient to the social expectations, omnipotent attitudes, and the sheer ignorance of those who choose to ignore its message.

The State of Maryland and AIDS

The Department of Health and Mental Hygiene is the state agency charged with protecting the health of Marylanders. As such, this agency has had to play a leading role in helping Maryland deal with the impact of AIDS and HIV (Maryland Department of Health and Mental Hygiene, 1987.

In July, 1987, the Department recognized that the implications of HIV infection exceeded traditional communicable diseases, and established a separate AIDS Administration. The new department's responsibilities included surveillance, education, and patient services for asymptomatic infection through the final stages of the disease.

Maryland's AIDS Administration. Since its inception, the AIDS Administration has been devoted to education for the prevention of HIV and AIDS. The costs involved with education and prevention are high, and monies for these services are not easily accessible.

The AIDS Administration has stated that prevention rests with a public choice. Care planning today will reduce tomorrow's long-term costs. Ignoring the epidemic will result in an increasing burden of health care costs to society. The disability and death of more of the state's citizens will enact a greater toll on society then assigning funds now to educate these people.

State Guidelines. In 1985, then Governor Harry Hughes, appointed a task force to help develop state policies to deal with AIDS. After a ten-month investigation, the findings and recommendations of the task force were published ("AIDS and Maryland", 1986). This report recognized the societal consequences of AIDS, and established a foundation for dealing with the disease.

Philosophically, the task force believed that HIV infection should be regarded differently from other diseases. It also stressed the rights of individuals to live and die with dignity.

The task force adopted the guidelines set by the Centers for Disease Control, and the Maryland Department of Health and Mental Hygiene. It supported nondiscrimination of AIDS patients, and case-by-case institutional decisions. Its recommendations also delineated the domains of voluntary testing, informed consent, and counseling associated with testing. The task force supported strict confidentiality of public and private medical records.

By law, AIDS is a reportable disease in all fifty states. In 1983, AIDS became a reportable disease, by regulation, in Maryland. Required reporting in Maryland, however, does not include persons with AIDS Related Complex (ARC), or asymptomatic persons. It does not imply, nor does it include the routine contact tracing of third parties.

One consistent theme formed the bases for the task force's recommendations. It stressed education as the key to preventing the spread of AIDS and HIV infection. The task force also believed that education was the combined responsibility of the public and private sectors.

Maryland's guidelines also included a very important statement about prejudicial behavior toward individuals who have HIV or AIDS. The report stated that HIV infected students or staff pose no health threat merely because they are infected with the virus. Although record confidentiality was strongly endorsed, it did not extend to areas where the needs of society were greater than the needs of the individual.

Special Interest Groups and AIDS

Collaboration in research and education has been supported by both the American Medical Association and the American Bar Association. These groups also support access to health care and nondiscrimination toward HIV or AIDS infected individuals (Henning, 1990; Zavos, 1990).

Each of these groups have published guidelines for the medical and legal ramifications of HIV and AIDS. The content of these reports address situation specific areas. While the availability of these reports should be acknowledged, their length would not warrant including them in this review.

The American Psychological Association (APA), however, has formalized a policy statement on AIDS. The guidelines in this policy statement place particular emphasis on AIDS education (Harden, 1990).

The American Psychological Association has adopted a comprehensive resolution outlining its policies surrounding AIDS. This resolution supports the association's commitment to education about the spread and prevention of AIDS. Included among the APA's suggestions were several guidelines for AIDS educational programs.

1. Educational programs should be designed to combat irrational public fears.

2. Educational programs should be designed to effect behavior and attitude changes. These changes should include decision making and risk assessment about personal vulnerability to HIV infection.

3. Important strategies for such education would be gender relevance and cultural sensitivity. These programs should also be intellectually, developmentally, and socially appropriate.

4. Education about AIDS must start at the lowest grade possible.

5. Effective education must address all behaviors through which AIDS can be transmitted. These programs should provide information about needle sharing and risky sexual behaviors, as accurately and explicitly as possible.

6. Educational programs should be developed with all deliberate speed

Each of the APA's guidelines was satisfied through the content of the current study. This study was designed to provide the students with timely and explicit information

about the risks associated with inappropriate behaviors. It was also aimed at promoting empathy and compassion for individuals who have been infected with AIDS or HIV, the virus that causes it.

The Media and AIDS

Ross, Freedman and Brew (1989) found that gay organizations and the media were the most common sources of information about AIDS. However, objective media reporting about AIDS has been rare (Signorile and Volecker, 1989). Signorile and Volecker found that although scientific coverage was accurate, few social perspectives were ever included in media reports. These investigators also found that the views of the people with AIDS were rarely, if ever, taken into account.

The Politics of AIDS

Most governmental emphasis about the spread of AIDS has been placed on blood products, intravenous drug use, and sexual behaviors. As different modes of HIV transmission have surfaced, cynicism about the government's dissemination of information has increased. In a recent study, almost every respondent believed that the government was not being completely honest in disseminating AIDS information (Rochlin, 1990b).

Mass mailings have been a major part of the Centers for Disease Control program. However, there have been extensive

delays in the distribution of this information. Creative commercials have been produced in association with the federal government, but most are shown between eleven at night and seven in the morning. Moreover, many stations have refused to run these commercials because they are controversial or sexually implicit (FNP Health Report, 1989b).

The federal government has also recognized the need for access to new drugs that have not yet attained full accreditation. In 1987, the federal government gave all licensed physicians access to promising investigational new drugs in serious and life-threatening diseases (Katz, et al., 1989). These new regulations have recognized AIDS in a bidirectional manner. AIDS patients now have access to promising new drugs and the federal government can collect data on the treatments.

Osborn (1989) suggests that political hesitancy in dealing with AIDS could have disastrous effects. Osborn also pointed to the off-limits policy of political intervention into sex education. This ambivalence also ignored the epidemic increases of sexually transmitted diseases before the emergence of AIDS.

Osborn also suggests that while drug use is central to the AIDS epidemic, the politics of substance abuse has been even more problematic. Sexually transmitted diseases have been acknowledged as health problems. Illicit substance

abuse has been perceived as a legal matter. Therefore, while the advent of AIDS coincided with an escalation of drug use, the former was treated as a disease, and the latter was treated as a crime. These inconsistencies ignored the strong correlation between intravenous drug use and the spread of AIDS.

Theoretical Reasons for Review

In 1992, it is projected there will be 80,000 new cases of AIDS diagnosed in this country. It is also projected that between 1 to 1.5 million people will be infected with HIV. These projections represent nearly as many cases in one year as have occurred in our entire experience with the disease.

The Program's Intent

The program presented in this report was based upon the premise that students should know how to protect themselves from AIDS and HIV. It was also based on the premise that it is the responsibility of higher education to provide this information. As such, it has borrowed from several other studies about college students and AIDS. Salient issues raised by other investigators have contributed to the program's intent and design.

Dissemination of Information

Nader, et al., point to the need for designing programs directed toward subculture peer groups. These investigators also felt that students should be educated about the reality of their vulnerability to AIDS. Perhaps most important, students should be taught specific skills to prevent AIDS infection, and should be well aware of the parts they play in AIDS' transmission.

Other investigators have suggested that interventions designed to change behavior should be tailored to specific groups (Klein, et al., 1987; LaTour & Pitts, 1989). LaTour and Pitts found that the cognitive impressions of college students varied according to the emphasis placed on the deadly consequences of AIDS. These findings have strategic implications for presentation of AIDS-Related information.

In the current study, no optimistic views, other than preventive measures, were presented in the class lecture. While a pessimistic presentation could be deemed one-sided or limiting, it required the students to acknowledge that certain behaviors are risky. Based upon LaTour and Pitts' findings, the axiom that it is better to be safe than sorry, was applied to the in-class discussion.

The program admitted there is sexual exploration by young people. The program also addressed the students' vulnerability to at-risk behaviors associated with AIDS' deadly consequences. The program also stressed that each

participant in an intimate encounter was solely responsible for his or her own protection against AIDS.

Structure of the Program

Ostrow has suggested that, after a regrettable delay, our society is finally devoting considerable resources to AIDS education. However, Ostrow questioned the lack of evidence that AIDS eduction programs work. Part of the research in the current study was directed toward investigating what programs are now in place, and their effectiveness based upon their participants' knowledge about AIDS.

Educating the Students

The ideas that educational programs about safer sex and drug use, encourage promiscuity and drug abuse are counterproductive precepts. These ideas, not the programs, deny the mission and philosophy of higher education. These ideas reduce the status of higher education, and increase its vulnerability to external manipulation.

Demographic data about the spread and prevention of AIDS and HIV were also addressed by this study. In the current study, the students were asked to provide information about their sexual behaviors, their exposure to at-risk behaviors, and about their attitudes and personal beliefs.

Thomas, Gilliam and Iwrey found that many students participated in at-risk behaviors. Their suggestions that AIDS programs should focus on risk behaviors instead of risk groups were incorporated into the current study.

In this study, several pamphlets about at-risk behaviors were given to the students. This literature addressed salient issues about AIDS/HIV spread and prevention (Appendix C). Details about its distribution are included in Chapter 3 of this report.

The suggestions of MacDonald, et al., about condom use have also played an important part in the design of the current program. In the current study, condoms were shown and distributed to the students. The serious implications of not using a condom were a major part of this program. The importance of condom use in preventing the spread of HIV infection was never compromised in the presentation of this program.

It was hoped that this public display would encourage the participants to understand that condoms need not be whispered about behind closed doors. It was also hoped that the participants would understand that their reasons for not using condoms were shared by others, and that these reasons contradicted common sense and empirical data.

In the current program, the students were given a considerable amount of AIDS-related information. Manning, et al., suggest that students who know more about AIDS will

practice safer sex. The participants in this study left the classroom considerably better informed than when they entered it. Whether or not this knowledge will encourage fewer at-risk behaviors, and will generalize to those with whom these participants interact, would be interesting to know.

Chapter 3

PROCEDURES AND METHODOLOGY

The current study was a developmental project, intended to design an AIDS education program for community college students in Maryland. The study was also designed to compare the students' actual knowledge about AIDS in relationship to five demographic variables; age, race, gender, marital status, and geographic location. Several steps were taken to gather information and data about the three research questions presented for this study. This chapter reports how each of these major steps were formulated and completed.

Questions about the programs at Maryland's seventeen community colleges were answered through personal communications (letters and telephone calls). Answers to the questions on the survey included reviewing research reports about AIDS, and data-based studies about the disease (AIDSLINE and ERIC). Demographic and statistical data were gathered through classroom visits and administration of the questionnaire. The final step in responding to the three research questions entailed analyses of the data gathered from the participants.

The answers to these questions were pursued through a combination of experimental designs. Several suggestions about procedural steps and information gathering were added by the AIDS Administration of Maryland. Demographic information was provided by the AIDS Administration of the State of Maryland (Maryland Department of Health and Mental Hygiene, 1990), Maryland Census data (United States Department of Commerce, 1981), and the Centers for Disease Control (United States Department of Health and Human Services, 1990). This information was used for descriptive purposes in several chapters of this report.

The study was developed as a sole-practitioner investigation. This included preparation for the program, its design, and its presentation. Having the same instructor present the program was an attempt to control for experimental biases in its presentation. The instruments developed for this design, and the selection of materials used to support its presentation, are discussed in the following sections of this report.

Institutional Cooperation

Research Question One asked: What AIDS educational programs are now in place at the seventeen community colleges in Maryland? Each community college was contacted and asked to provided information about the existence of specific programs to present AIDS-related information. The

institutions were also asked about the policies that had been formulated to deal with the disease.

Letters to each college president initiated the data collection. The individuals to whom these first letters were assigned for disposition were operationally defined as contact persons. The instructors of the classes to be surveyed were operationally defined as cooperating faculty members. Participants in this study were operationally defined as those students willing to supply the demographic and parametric data for evaluation.

Several phases of correspondence were required in the collection of the data. First, all the community colleges in Maryland were asked for information about current AIDS-related programs and policies. Next, research support and permission to enter the campus was solicited.

Each contact person to whom the letters had been assigned provided the names of several instructors. Faculty members who had indicated interest in participating in the program were called. After the program was completed, each cooperating faculty member and the participating institutions were thanked for their support.

Guidelines for Participating Institutions

The contact person was given several guidelines for the participating institutions, and was asked to provide access to one or two entry-level classes. No more than three

classes from any participating institution were included in this study.

Guidelines for Cooperating Faculty Members

Each cooperating faculty member, as suggested by the contact person, was called to arrange a mutually convenient time for administering the survey. Before the survey was administered, the total number of students registered for each class was ascertained.

If a student was absent on the day the survey was administered, the cooperating faculty member was asked to provide that student with a copy of the first page of the questionnaire. The first page of the questionnaire identifies demographic distributions. The purpose of this request was to compare the demographic characteristics of the students who were present for the program to those who did not have an opportunity to participate in the program. This method of data interpretation was an attempt to control for sampling error as a function of chance.

Each cooperating faculty member was asked to return the absentee responses, and was given a self-addressed, stamped envelope. If an absent student refused to complete the first page, no follow-up requests were made.

Descriptive statistics displayed the students' performances as a function of geographic differences. For the purposes of this report, geographic differences were

operationally defined as the institution from which the data were collected.

Intervention

Two phases of intervention were included to answer research question two: What do community college students know about the spread and prevention of AIDS? In the first part of the procedure, the students were asked to complete a questionnaire about the AIDS virus, and HIV transmission. The next part of the program occurred after the survey was administered. The students were given the correct answers to each of the questions and were encouraged to ask questions of their own.

When a student asked a question that was not the topic of discussion but would be answered later in the presentation, that question was deferred to preserve the continuity of the program. When a student asked a question that was not the topic of discussion and was not a planned part of the presentation, that question was answered immediately. Because the answers were presented in an interactive format, attempts to standardize the presentation would have been contrary to its intent.

The Questionnaire

A questionnaire entitled "What I Know About the AIDS Virus" was used to examine the students' knowledge about the

spread and prevention of AIDS (Rochlin, 1990b; Appendix B). Several questions on the survey asked the students to provide information about their intimate behaviors and personal opinions. Because this discovery relied upon the self-perceptions of the sample, it's accuracy may be questionable. The students' self-ratings, therefore, should be viewed within these confines.

The questionnaire did not account for subliminal access to information through the widespread media coverage or popular street parlance about AIDS. It did not identify naive respondents who believed themselves knowledgeable about AIDS, or knowledgeable ones who thought they knew nothing.

Significance

The questionnaire used in the current study was designed to identify the respondents' knowledge about AIDS and to stimulate discussion. As such, it should be viewed as an instrument intended to change with the publication of new ideas and information.

The instrument used in the current study was designed to identify five areas of the students' knowledge about AIDS.

Section 1: The Epidemic (factual information)
Section 2: How You Get AIDS (modes of transmission)
Section 3: Who Gets AIDS (stereotypes and spread)
Section 4: Sexual Behavior (protection and prevention)
Section 5: Personal Beliefs (attitudes)

The first four sections of the questionnaire were useful in collecting cumulative and selective data about actual knowledge. The fifth section of the questionnaire identified the respondent's personal beliefs.

A cover sheet on the questionnaire requested several disclosures about the respondents' intimate behaviors and personal attitudes. This cover sheet provided the demographic data used in the study.

Together, the five sections of the questionnaire and the cover sheet supplied the discovery data for the study. When combined, they presented a profile of the respondents' knowledge, attitudes, and personal beliefs about AIDS.

Development

Reliability and validity of the questionnaire were established through test-retest measures, alternate forms, content sampling, and correlations between subtests and total scores.

Chi-Square comparisons as a function of alternate forms and test-retest measures were greater than .01. The strength of these relationships indicated that the questionnaire was sufficiently reliable.

Chi-Square comparisons for questionnaire content also attained statistical significance at the .01 level. Face validity was established through the resources used for the content of the surveys and was supported by the strength of these results. However, the etiology and epidemiology of

this disease is such that the validity of any information is always in flux.

Salient questions presented by other sources were used to develop the questionnaire. Some resources for the questions were the Field Institute, the National AIDS Awareness Test, the Federal Centers for Disease Control, and the Surgeon General of the United States.

Questions of interest to the Youth Outreach Division of the AIDS Administration were added to the final form of the questionnaire. These additions neither contaminated the questionnaire's reliability, nor confounded its intent.

Administration

The questionnaire was presented to the students as a paper-and-pencil test in a true-or-false format. The questionnaire was also administered so that the respondents answered anonymously. The presentation of the program began when all the students had completed the questionnaires.

For the factual questions, if a student used more than one answer to a question, or did not answer a question, then that answer was considered an incorrect reply. For the opinion questions, if a student used more than one answer to a question or did not answer a question, then that question was omitted from the data for that student.

For the purposes of this study, having no opinion was considered as valid an answer as having strong opinions with regard to personal beliefs. The results of these decisions

are reflected in the differences between the number of participants in this study, the amounts of answers to each question, and the calculations based upon this total.

The Presentation of The Program

After the survey had been completed and returned, the students were given the correct answers to the questions. The students were also encouraged to discuss their beliefs about AIDS, and to ask other questions about the disease. The information collected for the answers was researched through the current literature about AIDS.

The intent of this program was not the rote recitation of the answers to the questions. It was, instead, a program conceptualized as being bidirectional between the presenter and the participants. However, several qualifications about its presentation are in order.

Format

The program begins with the last questions on the questionnaire. Pilot studies have indicated that these questions stimulate more discussion than the questions in the other four sections (Rochlin, 1990b). The first four sections of the questionnaire require forced-choice answers between accurate and inaccurate information. The final section of the questionnaire asks about the respondent's personal beliefs, and provides no empirical data.

While several questions can be answered with one sentence, others require the dissemination of considerably more information. The average length of time required to present the program is forty to fifty minutes. Most students can answer the questionnaire in five minutes. Rote recitation of the material would take approximately twenty minutes. The actual time spent in the classroom will be influenced by the number of questions asked by the students.

The personalities of the presenter and the participants will also change the types of interactions in the different classrooms. Whether the students become involved or are indifferent to the material, will affect the time required to complete the program and its pace. In this study, the same instructor presented the program to all of the students at each participating college.

Literature Distribution

The final part of the program entailed the distribution of AIDS-related literature. The AIDS Administration of the State of Maryland had considerable material it was willing to share. However, the development of the State's information has been based upon contact with the general public. Although its distribution was supportive as a general reference, its validity toward the special population in this study may be questionable.

The materials distributed were combined and selected to support the information presented in the program. The

students were given this literature after the questionnaire had been completed, and extra copies were left with the cooperating faculty members. The pamphlets given to the students were associated with five issues about the spread and prevention of AIDS and HIV (Appendix C).

Distribution of the literature was dependent upon its availability at the time the program was presented. Therefore, while all of the students did not get all of the pamphlets, each student received at least one piece of literature about at-risk behaviors, at-risk groups, sexual intimacy, and the spread and prevention of AIDS. Each student received at least six pieces of literature, and most students were given more than six.

Before meeting the students, the available literature was sorted into single, combined packets. Each student was handed a combined packet while the questionnaire was being completed. Combining and handing out the packets assured each student's receipt of some literature representing each of the above categories.

Presentation of Condoms

All the students were given a sexually explicit chart depicting the proper use of condoms, and a latex, spermicidal condom with Nonoxynol-9. The State of Maryland supplied Saxon spermicidal condoms, manufactured by the Safetex Corporation, as part of this program.

Before the condoms were given to the classes, however, each college and each instructor was told of their intended distribution. The condoms were only presented in class after permission to do so had been given by the college and the instructor.

Training Qualifications

The intent of this study was to present topical information about AIDS and HIV transmission. However, contradictory reports and new research findings surface daily. Therefore, while the only training required to present the program would be access to the correct answers to the questions, its presenter should have some knowledge about current AIDS-related research.

When presenting this program, the possibility exists that a participant may ask a question that is beyond the scope of the presenter's knowledge. Guessing about information would be counterproductive to the intent of this program.

The presenter should come to the program well-versed about the spread and prevention of AIDS, and aware of new information in the field. When the answer to a question is not available, it should be acknowledged as such, and an appropriate resource for the information should be suggested.

Self-Perceived Knowledge about AIDS

Research question three asked: How accurate are self-perceived levels of knowledge about AIDS as compared to the actual information held by the respondents? The last question on the cover sheet asked the respondents to rate their perceived knowledge about AIDS and HIV.

Each student self-selected the independent variable, perceived knowledge, by the number he or she indicated on the questionnaire. Students who selected a number between one and five were assumed to perceive themselves as having less knowledge than students who selected a number between six and ten. Each student's self-description (high level of knowledge about AIDS, or low level of knowledge about AIDS), was then compared to his or her actual score on the questionnaire.

The intent of this question was to evaluate the authenticity of the students' self-perceptions. It was hoped that these comparisons between actual and perceived knowledge would help to identify the strength of omnipotent attitudes about AIDS.

Population and Selection Procedures

The questionnaires were completed by 613 students enrolled in nineteen entry-level courses at the seventeen community colleges in Maryland. Any student, by virtue of being in a classroom where the survey was administered, was

eligible to participate in this study. In this study, the program was operationally defined as the administration of the questionnaire, a discussion about the questions, and the distribution of AIDS-related literature.

Entry-level courses were operationally defined as a class deemed specifically oriented to first-semester students. Surveying this subset was an attempt to control for the access to AIDS-related information as a function of the more advanced students' college course exposure. However, participating in an entry-level class is no guarantee that the student has just begun his or her education.

Guidelines for Cooperating Students

Before beginning the program, several issues relating to its presentation were addressed. The students were told that the program was designed to identify and correct misconceptions about AIDS, and that the questionnaire acted as a baseline from which discussion could be stimulated. Questions about the disease and the study were encouraged.

Strong emphasis was placed upon the anonymity of the respondents and the freedom of the individual to participate in the survey. Before the questionnaire was distributed, several instructions were given to the students.

All the students were told:

1. That the decision to participate in the program rested solely within the domain of personal choice.

2. That the program contained explicit, and potentially embarrassing material.

3. That the program provided access to accurate information and was aimed at reducing at-risk behaviors.

4. That the survey was not part of the course for which they had registered, and would have no impact on final course grades.

5. That the survey instruments contained questions about the spread and prevention of AIDS.

6. That the questionnaire was being administered to collect data from community college students.

7. That the questionnaire would also be used to stimulate discussion for the in-class presentation.

8. That anyone could leave the classroom before, or during, the presentation.

9. That even if a participant preferred not to complete the questionnaire, he or she was welcome to stay for the in-class presentation.

These instructions were an attempt to avoid placing any student in an embarrassing position by having to leave the classroom, or an uncomfortable one by having to complete the questionnaire.

Informed consent relied upon several basic assumptions.

1. By indicating a willingness to participate in the program, the students were assumed to have arrived at a voluntary decision.

2. Each student's decision to participate in the program was based upon knowledge of its contents.

3. Each student's decision to participate in the program included an understanding of the part he or she would play as a source of information in the study's collection of data.

Students in the classroom who did not wish to participate in the survey were also asked to complete the first page of the questionnaire. No student who refused to complete the first page of the questionnaire was pursued.

It was the intent of this investigator to approach the subject of AIDS in a sensitive, yet direct manner, and to interact with the students in an informal way. However the possibility of negative attitudes and personal biases should be recognized as part of the data collection and interpretation for this study. While stereotypical, overt reactions to the material presented can be identified, covert, internalized attitudes cannot be measured.

Statistical Analyses of The Data

Research evaluation for this sample was examined through between-groups and within-groups Analyses of Variance. The answers of males and females were separated in an attempt to discriminate between, and hold gender effects constant. The dependent variables for all designs were the scores attained on the questionnaire. The minimum acceptable level of significance was $p < .05$. Comparisons between the participants' performances may be found in the following chapter of this report.

The analytical domain of this research attempted to synthesize information about the AIDS virus as it related to higher education. This included the disease's impact on population predictions through demographic and statistical data. These data were pursued as part of this report, and are presented in narrative and descriptive formats in the following chapter.

Chapter 4

PRESENTATION OF RESULTS

The results of the inquiries into the three research areas, and the translation of these results into elements of an AIDS education program are presented in this chapter. The programs and policies of Maryland's community colleges are detailed in narrative form. The statistical analyses of the data for the students' knowledge about the spread and prevention of AIDS were based on the respondents' incorrect answers to the questionnaire. The demographic distribution of the sample, the sample's comparisons to global characteristics of community college students, and the students' opinions are displayed through descriptive tables.

Characteristics of Community College Students

Several studies have shown different enrollment influences and demographic distributions for students attending two-year and four-year institutions (New Jersey Department of Higher Education, 1987; Kitchens, 1987; Rochlin, 1989). Global demographic generalizations would describe community college students as: predominantly white, a female majority, not married, and between the ages of 18 and 20.

Demographic Distribution of the Sample

The number of students surveyed, their demographic characteristics and the courses in which they were enrolled, were dependent upon several influences. Entry into the colleges and access to the different classes was determined by the participating institutions. The number and type of students surveyed was dependent upon the institutions that allowed the program to be presented, and the number and composition of the classes assigned to the project. Table 1 describes the demographic distribution of this sample.

Table 1

Demographic Distribution of the Sample

Source	N	%
Age		
0-19	296	48
20-29	243	39
30-39	46	8
40 +	28	5
Race		
White	517	83
Black	96	15
Hispanic	6	1
Asian	7	1
Gender		
Male	234	38
Female	379	62
Marital Status		
Married	68	11
Not Married	545	89

Only three males and four females indicated Hispanic origins. Three males and three females indicated Asian backgrounds. These thirteen students were included in the statistical analyses as white. Comparisons between the small number of these students to the rest of the sample would be neither descriptive of group membership, nor statistically sound.

The racial/ethnic group distributions of the sample, however, do compare favorably to global generalizations about community college students. The sample in this study also supports the demographic enrollment distributions for Maryland's community colleges (Maryland State Board for Community Colleges, 1989). These group distributions are presented in Table 2.

Table 2

Racial/Ethnic Comparisons of the Sample

Source	Sample %	State %
Asian	1	3
Black	16	17
Hispanic	1	2
White	82	75

Students in nineteen different types of classes provided the data for this study. In some cases, although the name of the course was the same, the institution from

which the information was gathered was different. These differences account for the large number of students in some courses, and the relatively small number of students in other courses.

The course titles and numbers, and the number of participants for each, are presented in the following table. In most cases, the number of participants does not represent the total number of students in each class. Absent students and nonparticipants are addressed in other sections of this report.

Table 3

Courses Included in the Survey

Course Number	Course Title	Number of Students
101	Achieving Academic Success	14
108	Basic Student Survival	21
101	Community Health Issues	23
101	Contemporary Health Issues	45
071	English	12
103	Group Dynamics	13
130	Health Education	19
104	Health Problems	24
101	Human Biology	34
133	Human Sexuality	18
101	Introduction to Mental Health	22
101	Introduction to Psychology	147
101	Introduction to Sociology	25
121	Marriage and the Family	25
150	Personal and Community Health	77
103	Personal Health	26
101	Personal Health Seminar	26
101	Principles of Healthier Living	14
136	Stress Management	28

N = 613

Population Changes

Major populations changes have been predicted for the future of higher education (Fead, 1989; Hodgkinson, 1985). Today, two major changes are differential birthrates and dramatic increases in the number of children born outside of marriage. According to Hodgkinson, the rise of minority populations will be a powerful motivator prompting educational changes.

Although census data does support a majority of minorities for the future or higher education, the impact of AIDS may have a negative affect on future enrollment trends. While population predictions for higher education abound, most statistics have been based on the individuals most susceptible to the AIDS epidemic. Minorities have been especially hard-hit by HIV (DeAngelis, 1990).

White Marylanders represent seventy-five percent of the state's population and twenty-six percent of its reported AIDS cases. Black Marylanders represent twenty-three percent of the state's population and seventy-two percent of its reported AIDS cases. The percentages of reported AIDS cases for other ethnic/racial groups in Maryland are less than two percent.

Hodgkinson's predictions about differential birthrates have also been supported in Maryland (United States Department of Commerce, 1981). Figure 1 indicates that the highest number of births in Maryland are to Black teenage

women. Approximately ninety percent of Black teenage women who have had children, have never been married.

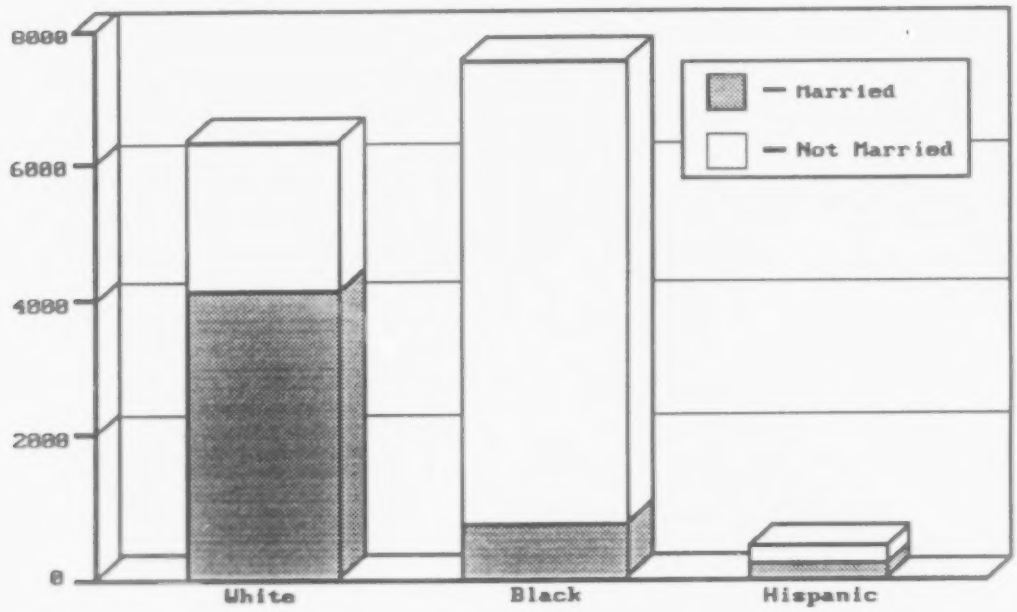

Figure 1

Maryland Birth Rate Differentials for
Women Between the Ages of 15 and 19

In Maryland, most incidents of AIDS cases for males were reported between the ages of 30 and 39. Reported AIDS case in females between the ages of 20 and 29, and between the ages of 30 and 39 were almost equal. There were more reported AIDS cases for females under the age of 39, then for males under the age of 39.

Twenty-nine percent of the state's population are between the ages of 18 and 34. In 1990, sixty-eight percent of Marylanders with AIDS were between the ages of 20 and 39.

The percentage of reported AIDS cases in Maryland, by age and gender, are graphically displayed in figure 2.

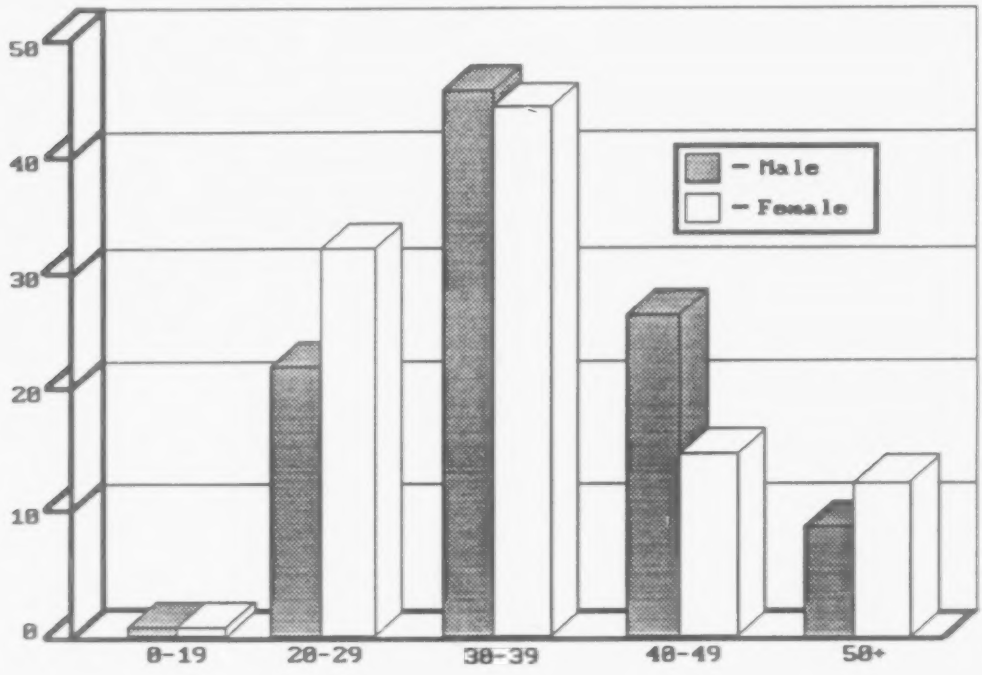

Figure 2

The Percentage of Reported AIDS Cases in Maryland by Age and Gender for January, 1990 to August, 1990

The demographic distributions in Figure 1, and the ratios of AIDS incidence in Figure 2, are directly related to higher education in Maryland. The number of reported AIDS case for individuals between the ages of 13 and 29, has been increasing disproportionately to the total number of new cases being reported. Furthermore, although Hodgkinson's majority of minority predictions are being supported in Maryland through birthrate differentials, the

higher rates of infection for minority groups may negate any impact on higher education.

Geographic changes in population distributions and the concomitant changes in drug use have also had important implications for the State and its educational systems. School programs, health care plans, and medical services are all affected by the risk AIDS poses to different populations, and the locations of these different groups.

Predictions about population changes, as compared to the effect of AIDS on these populations, may also change enrollment trends for higher education. The minority populations upon which predicted enrollments rely, are the same populations upon which AIDS has had the greatest impact.

Maryland Community Colleges' AIDS Programs and Policies

Maryland's seventeen community colleges ascribe to affordable, accessible education for all of the state's citizens. Each institution and its satellites serve predominantly localized populations. The enrollment distributions for each of the seventeen community colleges are presented in Table 4 (Maryland State Board for Community Colleges, 1989).

Maryland's community colleges have responded to AIDS in different ways. Investigations into the schools' programs and policies have disclosed no structured, institutionally

supported curricula. Information about AIDS programs and policies was gathered through communications with each of the seventeen institutions (Appendix A.). The community colleges' responses to requests for information about AIDS follow Table 4.

Table 4

Maryland Community College Credit Enrollment, 1988

Source	Full Time Students	Part Time Students	Total Students
Allegany	1,386	864	2,220
Anne Arundel	2,931	8,733	11,664
Baltimore	1,325	3,162	4,487
Catonsville	2,527	9,817	11,444
Cecil	262	1,185	1,447
Charles	876	4,090	4,966
Chesapeake	423	1,824	2,247
Dundalk	432	2,774	3,206
Essex	2,723	7,495	10,218
Frederick	977	2,493	3,470
Garrett	250	362	612
Hagerstown	966	1,675	2,641
Harford	1,091	3,363	4,454
Howard	854	3,071	3,925
Montgomery	6,061	15,504	21,565
Prince George	3,655	9,788	13,443
War Wic	201	831	1,032

No community college in Maryland provides a formal AIDS education program for its students. Although several community colleges have stated policies about the disease, these policies do not guarantee exposure to AIDS-related information. Education about the spread and prevention of

AIDS is dependent upon a student's good fortune to be enrolled in a concerned instructor's course. Inquiries about Maryland community college AIDS programs and policies have disclosed the following information.

Allegany Community College. Allegany Community College has issued a policy statement for employees dealing with infectious diseases. This institution ascribes to case-by-case decision policies about the admission of students with infectious diseases. The school also acknowledges the individual's right to privacy, and the confidentiality of records. Allegany's policy specifically states the non-exclusion of students or employees from school solely on the basis of HIV infection or AIDS.

Catonsville Community College. Catonsville Community College has created a task force to deal with AIDS and HIV. Its stated policy is to support educational programs for both the college, and the community.

Cecil Community College. Cecil Community College has stated policies about educational guidelines, institutional procedures, and the interaction of individuals with AIDS and HIV. The school's policy also delineates the Centers for Disease Control's universal precautions about contact with infected individuals.

Chesapeake College. Chesapeake College has no formal AIDS policies. The school does have a stated policy on

communicable diseases. This policy supports case-by-case evaluations about student admissions.

Dundalk Community College. Dundalk Community College has stated policies for laboratory safety, blood transfer, and body fluid precautions. Dundalk also has formal procedures for dealing with AIDS and HIV disclosure, and for support services for infected individuals.

Howard Community College. Howard Community College has no formal policies or procedures in dealing with AIDS or HIV infected individuals. Howard has indicated that it would use its affirmative action and disability leave policies to deal with the disease.

Prince George's Community College. Prince George's Community College has issued a policy statement about AIDS and HIV. This statement supports case-by-case enrollment and employment decisions for infected individuals.

Wor Wic Tech. Wor Wic Tech did respond to the request for information about AIDS policies and procedures. However, the school has no formal programs in place.

Montgomery Community College. Montgomery Community College has four campuses and deserves special mention. Montgomery's primary facility, the Rockville campus, was the only community college that refused to participate in this study. The school was opposed to the presentation of the program on campus, or affiliation with it through this study. The Rockville campus has no programs in place.

Several reasons were cited for Rockville's decision to be excluded (Garies, 1991). The Rockville campus did not want to divert its resources from other issues. An explanation for this statement was not available. The administrators at the Rockville campus believed that the questionnaire might place its students in potentially embarrassing situations, and that the college was already providing adequate AIDS-related information.

Montgomery was also one of the nine schools that did not respond to requests for information about its AIDS and HIV policies and procedures. Montgomery is the largest community college in Maryland. Its campuses are located in the bedroom communities surrounding Washington, DC. Montgomery serves an area where reported AIDS and HIV infections have been higher than other Maryland counties.

Students at the Takoma Park and Germantown campuses of Montgomery Community College, however, do have access to AIDS-related information (Glover, 1991; Kreissig, 1991). Takoma Park provides an intensive lecture series as part of a human biology course to as many as 200 students each year. The Germantown campus also provides AIDS-related information to students as a component of several health related courses on campus.

Nine colleges did not respond to the request for information. These colleges were: Anne Arundel, Baltimore,

Charles, Essex, Frederick, Garrett, Hagerstown, Harford, and Montgomery.

The initial intent of this design was to identify performance differences as a function of exposure to AIDS-related programs. The operational definition for these programs was a planned, separate sequence of instruction, specifically designed to provide AIDS-related information to college students.

Table 5 indicates that prior to the presentation of the program, the male participants at most of the colleges knew more correct answers than the female participants. The students at Chesapeake, Frederick, Harford, and Howard community colleges were most successful on the questionnaire. The students at Garrett Community College, and the New Community College of Baltimore had the lowest scores on the questionnaire. Overall, the participants answered an average of eight questions incorrectly on the survey instrument.

Because no formal programs were in place at the participating institutions, empirical comparisons between the students' performances as a result of access to AIDS-related information could not be made. Therefore, although some differences in the students' scores do exist, no cause and effect relationships can be implied or explained by these distributions.

The data should also be interpreted in the context through which it was gathered. Although the total sample size in this study was substantial, the samples taken from each college were small in comparison to the total enrollments for each institution. Percentage distributions of the students' incorrect answers are presented in Table 5.

Table 5

Percentage of Incorrect Answers as a Function of Geographic Location and Gender

Source	N	Percentage Wrong Male	n	%	Percentage Wrong Female	n	%
Allegany	22	7.33	3	14	5.37	19	86
Anne Arundel	15	6.00	4	27	9.00	11	73
Catonsville	47	6.00	19	40	7.18	28	60
Cecil	65	6.48	27	42	9.00	38	58
Charles	53	6.00	16	30	7.57	37	70
Chesapeake	44	5.80	15	34	5.67	29	66
Dundalk	21	8.33	6	29	8.33	15	71
Essex	69	7.48	27	39	6.81	42	61
Frederick	25	5.78	9	36	5.69	16	64
Garrett	26	9.36	22	88	8.75	4	12
Hagerstown	50	7.65	26	52	7.58	24	48
Harford	45	6.58	19	42	5.73	26	58
Howard	18	6.67	3	17	5.33	15	83
Montgomery	38	7.94	16	42	8.73	22	58
Prince Geo.	34	7.58	12	35	9.05	22	65
War Wic	16	7.00	3	19	8.46	13	81
New CC Balto.	25	10.00	7	28	7.94	18	72

Knowledge About the Spread and Prevention of AIDS

Research question two investigated the students' knowledge about AIDS as a function of demographic variables. The analyses for these data compared the students' actual knowledge about AIDS to five demographic variables; age, race, gender, marital status, and geographic location. The data provided in the following tables were based upon the number of incorrect answers provided by the students in response to the questionnaire.

Table 6 indicates significant differences between the students at the different institutions. The mean distributions for the students' performances may be found in Table 5 of this report. There were no differences between the performances of the male and female participants.

Table 6

Analysis of Variance of the Students' Incorrect Answers on the Questionnaire as a Function of Institution Attended and Gender

Source	SS	df	MS	F
Institution	675	16	42.18	6.43**
Gender	0	0	0.00	0.00
Inst. X Gender	446	16	27.88	4.23**
Error	3801	579	6.56	

** $p < .01$

The data presented in Table 7 indicates that the age of the respondents had a significant effect on performance. There were no statistically significant differences between the students' scores as a function of the gender of the participants. The performances of the students did vary as a function of the combined effects of institution attended and gender. The mean score distributions of the students' incorrect answers on the questionnaire by age and gender, may be found in Table 8.

Table 7

Analysis of Variance of the Students' Incorrect Answers on the Questionnaire as a Function of Age and Gender

Source	SS	df	MS	F
Age	84	3	28.00	2.97*
Gender	3	1	3.00	.32
Age X Gender	32	3	10.67	1.13
Error	5697	605	9.42	

* $p < .05$

Table 8 indicates that respondents under the age of 19 were least knowledgeable about the spread and prevention of AIDS. Respondents over the age of 40, supplied the most accurate information about the disease.

Table 8

Mean Score Distributions of the Students' Incorrect Answers on the Questionnaire by Age and Gender

Age	Male	Female	Total
0-19	7.29	7.41	7.36
20-29	7.24	7.39	7.33
30-30	6.20	6.55	6.48
40 +	3.60	6.39	5.89
Total	7.14	7.26	

Males N = 234
Females N = 379

Table 9

Analysis of Variance of the Students' Incorrect Answers on the Questionnaire as a Function of Race and Gender

Source	SS	df	MS	F
Race	91	1	91.00	11.39**
Gender	1	1	1.00	.13
Race X Gender	0	0	0.00	0.00
Error	4864	609	7.79	

** p <.01

Table 9 indicates that the racial backgrounds of the students had a significant effect on performance. In this survey, the White students (mean = 7.05), answered more

questions correctly than the Black students (mean = 8.10). There were no statistically significant differences between the students' scores as a function of the gender of the participants.

Examination of Table 10 indicates that there were no differences between the participants as a function of marital status or gender. While the married students did perform somewhat better (mean = 6.96) than the nonmarried students (mean = 7.24), comparisons between the performances of married and nonmarried participants were not statistically significant.

Table 10

Analysis of Variance of the Students' Incorrect Answers on the Questionnaire as a Function of Marital Status and Gender

Source	SS	df	MS	F
Marital Status	6	1	6.00	.80
Gender	1	1	1.00	.13
MS X Gender	22	1	22.00	2.96
Error	4527	609	7.43	

Two within-groups designs compared the responses obtained from the seventeen community colleges in Maryland. Both males and females demonstrated statistically significant differences in performance on the subsets of the questionnaire.

Table 11

Analysis of Variance of Incorrect Answers to the Questionnaire Subsets by Gender (Male)

Source	SS	df	MS	F
Institution	5348	16	234.25	3.60**
Subset	17298	3	5776.00	
Error	4462	48	92.66	
Total	27108	67		

** p <.01

All the students answered more questions incorrectly in subsets three and four, then in subsets one and two. Although statistically significant differences were shown for both males an females at the different institutions, the strength of these differences was greater for females than males.

Table 12

Analysis of Variance of Incorrect Answers to the Questionnaire Subsets by Gender (Female)

Source	SS	df	MS	F
Institution	11417	16	714	11.13**
Subset	22136	3	7379	
Error	3005	48	63	
Total	36558	67		

** p <.01

Both the male and female respondents knew more about the etiology of the disease then about AIDS epidemiology. The students knew more about the social aspects of the disease then about its spread and prevention.

The mean distributions for each of the subsets were:

1. The epidemic = 1.05
2. How you get AIDS = 1.50
3. Who gets AIDS = 2.25
4. Sexual behaviors = 2.58

Nonparticipants

Although each instructor was asked for absentee data, only five completed surveys were returned. While these data would have been useful for demographic comparisons to the sample, the results of this study should not rest on its omission. The distribution of this sample compared favorably to other researchers' demographic descriptions of community college students. The majority of the students were White, not married, female, and between the ages of eighteen and twenty.

Comparisons Between Self-Perceived and Actual Knowledge About AIDS

The purpose of research question three was to analyze the students self-perceived knowledge about AIDS. Students who selected a number between one and five were operationally defined as low self-perceptors. Students who selected a number between six and ten were operationally defined as high self-perceptors.

Seventy-seven percent of the students who responded to the questionnaire believed themselves to be very knowledgeable about AIDS. Although Table 13 indicates some variances between the replies of males and females, the number of incorrect answers were independent of gender or the students' self-ratings. Furthermore, some students who indicated knowing a great deal about AIDS, answered more questions incorrectly than the students who indicated knowing very little about the disease. The low self-perceptors answered only one or two more questions incorrectly than the high self-perceptors.

Table 13

Comparisons of The Students' Incorrect Answers on the Questionnaire to Self-Perceived Knowledge About HIV and AIDS

Self-Ratings	Male % Wrong	Rank	Female % Wrong	Rank	Total Rank
Little Knowledge					
1	11.50	10	9.33	9	10
2	8.00	9	9.67	8	9
3	7.83	8	9.90	10	8
4	7.39	6	8.42	7	7
5	7.24	5	7.65	6	6
6	7.41	7	7.46	5	5
7	6.44	3	6.39	3	3
8	6.59	4	5.10	2	2
9	2.03	1	4.54	1	1
10	6.29	2	7.44	4	4
Very Knowledgeable					

1 = Most Correct Answers
10 = Most Incorrect Answers

It could be suggested, therefore, that even though the high self-perceptors answered more questions correctly, the low self-perceptors may have a more realistic perspective on their knowledge about the disease. The students' scores, and how these scores ranked in the distribution may be found in Table 13.

When separated, the five domains surveyed by the questionnaire provided some interesting replies. The number of incorrect answers to each question on the survey, and the percentage distributions calculated for these responses may be found on Table 14.

The Epidemic: The questions in this subsection requested information about the physiological manifestations of AIDS. The students were particularly naive about the number of people infected with the disease, the costs associated with HIV and AIDS, and the susceptibility of women to infection. One-third of the students did not believe that the government had been completely honest about the issues surrounding AIDS and HIV.

How You Get AIDS: The students held many misconceptions about the etiology of the AIDS virus. Many students considered AIDS more contagious than both measles and the common cold. AIDS is highly contagious through at-risk behaviors, but not a highly contagious disease. Forty-one percent of the students held bacterial infection responsible for the virus. Only five percent of the

students felt no responsibility for finding out about a partner's past sexual experiences.

Who Gets AIDS: The questions about the epidemiology of AIDS disclosed several inconsistent answers. Some students linked infection to homosexuals, ethnic populations, and parasitic causes. More students believed that donating blood was a greater risk then receiving blood. These answers present a disturbing paradox. Giving blood presents almost no risk to the donor. Blood transfusions are one of the three primary transmission routes of HIV infection.

Seventy-three percent of the students believed that hospitals were required to protect their employees against infection. Obviously, for the participants in this study, expectations for the medical community's responsibilities were very high. At present, there are no specific rules for the protection of health care workers.

Twenty-seven percent of the students believed that a recent negative blood test proved that a person was not an HIV carrier. The identification of HIV antibodies requires two tests. The second test is taken six months after the first test. Negative outcomes on the second test, rely on the assumption that the individual has not participated in risky behaviors during the six-month interval between the tests.

Sexual Behavior: The largest number of incorrect answers fell within this subsection. Forty-four percent of

the students believed that vaginal sex was more dangerous then anal sex. More students believed that a natural condom (31%) rather then a latex condom (19%) was the best prophylactic protection. Forty-three percent of the students did not know that a spermicidal gel reduced risk factors in sexual interactions.

Most of the students believed that abstinence could be a safe harbor from HIV infection. While this question's conceptual tie to the sexual behavior subsection may have been misleading, the answer to the question is still false. Including the question in this subsection was a deliberate attempt to stimulate discussion and reinforce the effects of other risky behaviors.

Twenty-seven percent of the students believed that protective measures were not their sole responsibility. This reliance on partner participation raises serious questions about the omnipotent attitudes and lack of responsibility of the respondents.

The students incorrect answers increased as the survey moved toward personal behaviors and away from factual information. Table 14 supports the students' higher knowledge about the etiology than the epidemiology of AIDS.

For this sample, the percentage of incorrect answers in each subsection were:

1. The Epidemic = 26%
2. How you get AIDS = 37%
3. Who gets AIDS = 51%
4. Sexual behaviors = 57%

Table 14

The Number of Incorrect Answers to Each Question on the Survey by Raw Scores and Percentage Distributions

Question Number	Male Score	%	Female Score	%	Total Score	%
The Epidemic						
1	45	19	107	28	152	25
2	11	4	24	6	35	6
3	28	12	49	13	77	12
4	16	7	29	8	45	7
5	41	18	40	11	81	13
6	13	6	22	6	35	6
7	73	31	132	35	205	33
How You Get AIDS						
8	35	15	67	18	102	17
9	46	20	96	25	142	23
10	17	7	43	11	60	10
11	54	23	74	20	128	21
12	88	38	163	43	251	41
13	67	29	128	34	195	32
14	15	6	15	4	30	5
Who Gets AIDS						
15	157	67	288	76	445	73
16	37	16	48	13	85	14
17	65	28	107	28	172	28
18	52	22	78	21	130	21
19	52	22	65	17	117	19
20	59	25	88	23	147	24
21	71	30	93	25	164	27
Sexual Behavior						
22	87	37	182	48	269	44
23	69	29	119	31	188	31
24	47	12	67	18	114	19
25	146	62	251	66	397	65
26	35	15	34	9	69	11
27	105	45	160	42	265	43
28	61	26	109	29	170	27
	n=234		n=379		N=613	

Intimate Behaviors and Personal Beliefs About AIDS

The cover sheet for the questionnaire included several questions about personal behaviors and attitudes. The results of the students' disclosures are summarized in Tables 15, 16, 17, and 18.

The data in Table 15 summarizes the students' answers to the first six questions on the cover sheet. These answers were supplied in a true-false format. The students' answers to the questions in Table 15 indicate that few respondents were engaging in at-risk behaviors. However, the respondents' answers to two questions in Table 15 should be qualified.

Table 15

Percentage Distributions of the Students' Affirmative Responses to Questions About At-Risk Behaviors

Question	% Males	% Females
Had Sexually Transmitted Disease	11	2
Used Drugs Intravenously	6	3
Tested For AIDS/HIV	53	61
Had Homosexual Experience	8	11
Present Preferences Homosexual	5	4
Consider Themselves Bisexual	4	0

Males N = 234
Females N = 379

First, the small numbers of respondents who indicated having had a sexually transmitted disease is not consistent with population distributions for infection. Next, the question about having been HIV tested may have also been misleading. In each class, some student asked about donating blood in connection with being tested for HIV. Therefore, while the intent of this question was to ascertain testing specifically related to the disease, the answers may have been confounded by testing associated with blood donations.

The information presented in Table 16 represents the responses of the students who had been sexually active during the last year. The respondents who had not been sexually active during the last year, or were married and in monogamous relationships were separated from the distribution.

Seventy-four percent of the total sample (442) had been sexually active in the last year. Sixty-three percent of the males (190) and thirty-three percent of the females (252) had engaged in sexual activities with more than one partner. Only twenty-four percent of the males and seventeen percent of the females reported using a condom for all sexual interactions. Approximately sixty percent of the total sexual interactions reported were without prophylactic protection.

Table 16

Sexual Behaviors of the Students: The Percentage of Condom Use and Number of Sexual Interactions Reported by the Students

Condom Use	Sexual Interactions (Partners)									
	1		2-5		6-10		10+		Total	
	%	n	%	n	%	n	%	n	%	N
Males										
Always	9	18	11	20	3	6	1	2	24	46
1/2	11	20	21	39	3	5	2	4	36	68
Never	17	33	20	40	1	2	1	1	40	76
Total	37	71	52	99	7	13	4	7	100	190
Females										
Always	13	33	4	11	0		0		17	44
1/2	25	63	20	50	0		0		45	113
Never	30	75	7	28	0		>1	2	38	95
Total	68	171	31	79	0		1	2	100	252
Total	55	242	40	178	3	13	2	9	100	442

Males n = 190
Females n = 252
Total N = 442

The rate of condom use may also be misleading. Condom use is not limited to protection against sexually transmitted diseases. Condoms used for birth control should also be recognized as a reason for the respondents' answers to these questions. This effect may be particularly true for condom use by the single-partner respondents. Many respondents included in this distribution were not married, but many have been in longstanding monogamous relationships

where sexually transmitted diseases were of little or no concern.

Table 17

Percentage Distributions of the Students' Personal Beliefs and Attitudes About AIDS

Question	Males % Yes	Males % No	Females % Yes	Females % No
AIDS Patients Should Pay Own Medical Costs	29	71	19	81
Would Favor Compulsory Testing	68	32	65	35
Would Be Uncomfortable Around AIDS Patient	64	36	45	55
Would Touch Someone With AIDS	53	47	69	31
Physicians Should Treat Infected Individuals	47	53	54	46
Know Someone with AIDS or HIV	15	85	18	82
Have Always Been Honest About Past Experiences	78	22	80	20

The data shown in Table 17 indicates that the males and females shared similar personal beliefs. The students supported medical subsidies and favored compulsory HIV testing. More males than females indicated feeling

uncomfortable around an AIDS patient, and more females than males were willing to interact with infected individuals.

More females than males believed that physicians' should be required to treat infected individuals. Seventeen percent of the participants knew someone with AIDS or HIV. Twenty-two percent of the males and twenty percent of the females indicated not being completely honest about past sexual experiences.

Table 18

The Effect of the AIDS Epidemic on The Students' Attitudes Toward Homosexuals and Drug Users

Attitude	% More Sympathetic	% More Adversarial	No Change
Toward Homosexuals			
Males	12	43	45
Females	17	56	27
Toward Drug Users			
Males	6	38	56
Females	8	41	51

Males N= 234
Females N = 379

Table 18 indicates that fifty-five percent of the males and seventy-three percent of the females indicated that the AIDS virus had changed their attitudes toward homosexuals.

More than half of the students indicated no attitudinal change toward drug users.

Whether the students came to this study sympathetic or adversarial toward the two groups was not the question for consideration. The intent of this question was not to assess the students attitudes toward homosexuals or drug users, but changes in attitudes as a result of AIDS.

Approximately one-half of the students indicated obtaining most of their information about AIDS through media sources. Responses to the other sources of information specified on the cover sheet were negligible. These sources of information included parents, friends, and a blank space for other responses. The percentage distributions of the other sources listed in Table 19 also included the respondents who checked more then one source of information about the disease.

Table 19

The Students' Sources of Information About AIDS

Gender	Source		
	% Media	% School	% Other
Males (N = 234)	47	27	26
Females (N = 379)	50	32	18

The presentation of the tables about the students' intimate behaviors and personal beliefs were intended as descriptive analyses rather than statistical ones. Although statistically significant differences in the students' performances were shown between the institutions, the reasons for these differences were not institutionally effected. The results of this study disclosed no standardized programs and few formalized polices about AIDS at the seventeen community colleges in Maryland.

The students responses to the items on the questionnaire, and questions about intimate behaviors and personal beliefs, provided some interesting and disturbing data about the participants. In this study, although the students were endowed with a considerable amount of accurate information about the AIDS virus, they were also considerably misinformed. A narrative interpretation of these results may be found in Chapter 5 of this report.

Chapter 5

INTERPRETATIONS, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this project was to identify, and help to correct community college students' misconceptions about AIDS. The project was also designed as a data gathering study to suggest alternatives for disseminating AIDS-related information to college students in Maryland.

Two areas of investigation were pursued as part of the overall design of this study. The first part of the design identified the AIDS programs and policies of the seventeen community colleges in Maryland. The final part of the study addressed the students' attitudes about AIDS, and their self-perceived knowledge about its epidemiology.

Interpretations

In this study, the average number of students in each class was twenty-two. The participants in this study fell within the parameters of the global generalizations about community college students. Each of the seventeen community colleges in Maryland were represented in this study.

The total sample included 234 males and 379 females. Seven of these respondents were Asian, 96 were Black, 6 were Hispanic, and 517 were White. The youngest participant was

17, and the oldest participant was 62. Sixty-eight of the respondents were married, and 545 were not married.

Maryland Community College Programs

The geographic distributions in this study encompassed all the counties in Maryland and Baltimore City. Although several community colleges in Maryland have developed policies about interacting with AIDS patients, none provide comprehensive AIDS-education programs.

Although there were differences between the participants' performances on the questionnaire, the reasons for these differences were not defined by this study. Institutionally, neither location, rural versus urban settings, nor the sizes of the schools, would suggest any commonality for the differences between the students' replies. Speculation, therefore, would attribute the differences in the students' performances to individual, not institutionally linked sources.

Replies to the Questionnaire

The results of this study indicated that the students held considerable misconceptions about the spread and prevention of HIV and AIDS. These misconceptions were neither selective nor compartmentalized. The combinations of incorrect answers on the questionnaire were as varied as the students who participated in the survey. Although several questions were answered incorrectly by most of the

students, none of the questions were answered correctly by all of the students.

Respondents under the age of 19 were the least knowledgeable about the spread and prevention of AIDS. White students answered more questions correctly than Black students. Neither marital status nor gender had a significant effect on the students' scores.

The students were not particularly well-informed about the disease's etiology or epidemiology. The students' personal beliefs about the disease would support intervention directed toward attitudinal change. Most of the participants in this study had not personalized the impact of the epidemic or internalized the consequences of risky behaviors. AIDS is a lethal disease. The students' lack of knowledge about safe sexual behaviors supports other research about the spread and prevention of AIDS. It is at this level where the participants are most vulnerable to the disease and bear the greatest responsibility for its spread.

Although a questionnaire had been developed to address salient issues about AIDS and HIV, its validity will always be suspect. The purpose of the questionnaire was to stimulate discussion and provide current information about AIDS. As such, new issues arising as a result of classroom discussions, and new developments about AIDS and HIV deserve recognition. Therefore, while the importance of test standardization should not be ignored, the effectiveness of

an outreach program should not be subservient to the testing instrument.

Other researchers should view this questionnaire as a model into which new information about AIDS and HIV can be integrated. The questionnaire's effectiveness, therefore, is synonymous with change.

Personal Beliefs and Attitudes About AIDS

On a personal level, this sample's compassion for others and responsibility for themselves left a lot to be desired. Several answers contradicted common sense about the disease. The students were willing to touch someone with AIDS, but would not want to be around that person.

The students took divided positions on the responsibilities of doctors to treat the disease, and patients to pay for treatment. The students believed that responsibility for medical costs rested within the domain of the infected individual, and the way in which the disease was acquired.

The students supported government subsidies for patients who acquired the disease through no faults of their own, but not for those engaging in risky behaviors. For example, if the disease was acquired through tainted blood, the patient should not have to pay the costs of treatment. However, if infection was the result of drug use or homosexual interactions, then the infected person should be responsible for the costs associated with the disease.

Seventy percent of the students believed in compulsory HIV testing. Yet, very few students had been tested specifically for the disease. During the classroom discussions, the students were told that these questions should have been answered in the same direction. A belief in compulsory testing demands the concomitant belief that one should be tested. The belief in compulsory testing should not ascribe to testing for everyone other than the respondent.

Based upon these replies, seventeen percent of the students knew someone who had AIDS or HIV. Twenty-two percent of the males and twenty percent of the females had not always been completely honest about their past sexual experiences. The students' answers to this question were not consistent with other findings about lies in intimate relationships (Wheeler, 1990). Although no reasons exist to doubt the students' veracity, problems with the reliability of self-reports as suggested by Hernandez and Smith (1990), may have mediated some of these answers.

The discussion portion of the program placed considerable emphases on this question. The students were told that people sometimes do tell small lies to have sex, and that some people do tell much more dangerous lies to have sex.

The Questionnaire Cover Sheet

Eleven percent of the males and two percent of the females indicated having had a sexually transmitted disease. Although the students' answers should be taken at face value, the responses to this question contradict other research about the prevalence and epidemic proportions of sexually transmitted diseases (MacDonald, et al, 1990).

It could be suggested that some students may not have known which diseases are considered sexually transmitted. A resolution of this problem could include listing different sexually transmitted diseases beneath the question, and requiring the students to check one or none.

Six percent of the males and three percent of the females had used drugs intravenously. Over fifty percent of the respondents indicated having been tested for HIV. These high rates of response to HIV testing, however, were confounded by mandatory HIV testing associated with blood donations. Furthermore, testing associated with blood donations implies a single incidence infection evaluation. Two tests, six months apart, are required to identify HIV antibodies.

Eight percent of the males and eleven percent of the females acknowledged having some homosexual experience. The sexual preferences of five percent of the respondents were exclusively homosexual. Four percent of the respondents considered themselves bisexual.

Most of the students' information about AIDS had come from media sources. These results support Helgerson and Petersen's findings in 1988. Although three years have passed since Helgerson and Petersen reported these findings, no change in access to information about AIDS can be shown by the current study. More than half of the students in this study reported learning about AIDS through media sources.

The AIDS virus had changed most of the students' attitudes toward homosexuals and drug users. Although a few of the respondents had become more sympathetic to the plights of these groups, most of the respondents had become more adversarial. In this study, suspicions and prejudices toward stereotypical groups were demonstrated by the students' answers to the questions on the cover sheet and several questions on the survey instrument about minority populations.

In the past year, thirty-nine percent of the sexually active, unmarried participants had not used a condom. Sixty percent of the students' total sexual interactions were performed without prophylactic protection. These results contradict Sonenstein and Pleck's (1989) findings about increased condom use.

Most of the males had been sexually active with two-to-five partners. Most of the females had been sexually active with one partner. The sexual interactions of these

respondents, multiplied by the number of individuals with whom they were intimate, clearly support the rippling effect of HIV transmission.

Self-Ratings About AIDS Information

The intent of research question three was to evaluate the authenticity of the students' self-perceptions. It was hoped that comparisons between actual and perceived knowledge would help to identify the strength of omnipotent attitudes.

The results of this study support the findings of Hernandez and Smith (1990) about students' inaccurate self-perceptions. The students self-reported behaviors were risky, and their self-perceived knowledge about AIDS was inaccurate. The students who considered themselves to be best informed were the ones who had the least accurate knowledge about AIDS.

More than three-quarters of students believed themselves to be very knowledgeable about the spread and prevention of AIDS. In this study, there were no significant differences between the scores of the students as a function of self-perceived knowledge about AIDS. The students who perceived themselves less knowledgeable about AIDS, were as well informed as those who believed themselves very knowledgeable about the disease.

The data supplied here would seem to support omnipotent attitudes in the respondents. These erroneous

self-perceptions would also support the suggestions of other investigators for programs designed to promote attitudinal change. Individuals who believe they know a great deal about AIDS when they do not, may be less responsive to its threat and more vulnerable to infection.

Research Implications and Conclusions

The identification of students' misconceptions about AIDS and HIV should be an important concern to all institutions. The results of this study indicated that many students held erroneous beliefs about the spread and prevention of this disease.

Because HIV is primarily a problem among young people, higher education is particularly vulnerable to its effects. Keeling (1989) suggested that higher education has the opportunity to protect and preserve the health of its students. As such, teachers have responsibility to educate themselves and their students about AIDS.

However, access to accurate information is no guarantee that positive behavioral changes will occur. Accurate information must be internalized and applied. As suggested by Biemiller (1987) and Mangan (1988), this information should be reinforced through repetition and through new formats.

Society is now facing an epidemic of major proportions and its influence on higher eduction cannot be denied. While

population predictions are being made for future numbers of college-age individuals, no assumptions can be made that they will attend college.

Although many reasons exist for not going to college., for those infected with AIDS, attaining this goal may be an impossibility. The future of higher education faces a major challenge. Those individuals upon which predictions for the future are based, are the ones most susceptible to the AIDS epidemic. As such, it is the responsibility of all systems to educate for prevention and protection.

AIDS research has largely ignored peripheral participants and prospective patients. The domains surveyed in this study were an attempt to consider these new issues. It was also hoped that the intervention of the program presented at the participating institutions would change some of the erroneous beliefs held by the students. However, knowing the right answers on a paper-and-pencil measure may not be the same as knowing the right answers in the throes of passion.

Implications for Higher Education

Attempts at public education have met with extensive delays in disseminating AIDS information. Ross, Freedman and Brew (1989) found that gay organizations and the media were the most common source of information about AIDS. This

effect was supported by the responses received from the students in the current sample.

Many investigators have suggested that interventions designed to change behaviors should be tailored for specific groups. LaTour and Pitts (1989) also found that the cognitive impressions of college students varied according to the emphasis placed on the deadly consequences of AIDS.

The current study presented no optimistic views other than the effectiveness of protection, and common sense attitudes toward at-risk behaviors. While a pessimistic presentation may seem one-sided, it held the students' interests and required them to acknowledge that certain behaviors are potentially risky. Based upon LaTour and Pitts' findings, the axiom that it is better to be safe than sorry, was applied to the in-class discussion.

The exponential increase of HIV infected individuals should be of particular concern to higher education. The disproportionate effect of HIV on teenagers and young adults has implications for higher education on several levels.

If, as the literature suggests, the incidence of AIDS is stronger among minority populations, then their offspring will suffer its consequences. Yet, the literature also predicts a majority of minorities in the next generation of higher eduction. The inconsistencies here should be of major concern to all educators.

If enrollment trends will change, then higher education must be prepared to deal with the nature and effect of these changes. With the emergence of a new influence on higher eduction, new issues must be considered.

First, educators will be interacting with considerably more people incubating or infected with the disease. Next, current assumptions about the reasons for college attendance may warrant review. It would be unlikely that an individual suffering form a terminal illness would be attending college for the same reasons as a student with a bright future. Finally, accurate education about AIDS must be included in all college curricula, whether or not this information is deemed controversial.

Synthesis and Refinement: An Improved Program of AIDS Education for Community College Students

This study has shown that college students hold many misconceptions about the spread and prevention of AIDS. Based upon the statistical analyses of this study, several suggestions could be made for the development of community college programs about AIDS.

The Questionnaire. The questionnaire should be revised on an ongoing bases. These changes should include new information about AIDS and HIV, and common sense concerns as voiced by previous respondents.

The questionnaire could also be reduced to focus on the most commonly held misconceptions about AIDS and HIV. The results of this study have shown that some of the questions were answered correctly by most of the students. These questions could be deleted in future forms of the questionnaire.

While not denying the importance of all the issues surrounding AIDS, a reduced version of the questionnaire might encourage more instructors to present lectures about AIDS. These modifications, within the subsets' structures, would not change the questionnaire's intent. A prototype of a reduced version of the questionnaire may be found in Appendix A (Form B) of this report.

Classroom Discussions. The students in this study were willing to discuss the issues surrounding the spread and prevention of AIDS. In most of the classes, this part of the procedure could have continued longer than course time allowed. The students were particularly interested in rumors about the disease, it origins, and prospects for a cure or vaccine. Information of interest to the students should be explored and included in the discussion.

Distribution of Literature and Condoms. Many creative pamphlets are available from State sources and private agencies, free of charge. In this study, many students requested extra copies of the literature distributed in class. Suggestions for future presentations would include

encouraging the students to distribute the literature as part of an ongoing process of the program. Involving the students with a task outside of the classroom might enhance affiliations toward the program and promote greater commitments to its message.

Both the males and females were extremely receptive to the distribution of the condoms. Although only 613 students participated in the project, over four thousand condoms were distributed. This would suggest a willingness on the parts of the students to use the condoms. However, the importance of the differences between condoms, and the protection provided by spermicidal gels should be emphasized.

The students must also be told about the effective and ineffective ways in which condoms are used. The students ideas about condom use in the current project were similar to concerns reported in other studies. Embarrassment, reduced sensitivity, and lack of spontaneity were all discussed as reasons for not using condoms.

Based upon other investigators' suggestions for in-class discussions (Sonnex, 1989; Strader & Beaman, 1989; Weisman, et al., 1989), the validity of the students' concerns about condom use were acknowledged. However, the risks associated with ineffective condom use were also presented as being comparable to the risks associated with no prophylactic protection during sex.

Spermicidal, latex condoms are available free of charge from the State of Maryland and private sources. Other presenters of the programs should take advantage of these resources.

Age Differences. Statistically significant differences in performance as a function of age, were shown by the respondents in this study. The younger, presumably more vulnerable students were less knowledgeable about AIDS than the older students. These differences would support different types of formats suggested by Nader (1989) for disseminating AIDS-related information. These formats must be developed to appeal to different age groups and subculture peer groups.

These differences would also support Thomas, Gilliam and Iwrey's (1989) findings about differential access to information. Individuals who are well-informed perceive less barriers to AIDS' prevention, and will do more to protect themselves.

Content Differences. Statistically significant differences were also shown between the students' answers to the questions about AIDS' etiology and epidemiology. The students knew more about the cause of the disease than about its spread or prevention. Content revisions should reflect these differences to produce a better balanced survey instrument for the dissemination of AIDS-related information.

Attitudinal Change. As more individuals become better informed about HIV transmission, new programs should be developed toward attitudinal change. One suggestion for future programs would include the development of other formats to disseminate information about the disease. The introduction of speakers associated with the disease might promote attitudinal change.

1. Officials from the State of Maryland could introduce students to State guidelines and policies about AIDS and HIV.

2. Speakers representing private agencies and special interest groups could provide other resources for individuals carrying personal concerns about the disease.

3. Research investigators could present information about the prospects of a cure or vaccine for HIV, and address rumors and misperceptions about the disease.

4. Health care professionals working with AIDS and HIV patients could provide perspectives about patients suffering with the disease, and dealing with infected individuals.

5. Ostrow (1989) has suggested that social affiliations and peer support are especially important for changing behavior. Having a college student speak about his or her personal concerns and behavioral changes as a result of AIDS, might encourage other students to evaluate and personalize the disease.

6. A speaker who is homosexual, an intravenous drug user, or someone who is HIV positive might encourage more empathetic responses toward those infected with the disease. While these three speakers would carry vastly different messages, their appearances would bring other perspectives toward at-risk populations, at-risk behaviors, and the stigma and sorrow of infection.

Gender Differences. No Statistically significant gender differences were demonstrated as a function of the questionnaire's content. However, during the discussion portion of the program, the participants' positions on some of the issues addressed by the questionnaire were very different.

Most attitudinal differences between the sexes centered around intimate behaviors and the introduction of condoms in new relationships. Suggestions for other presentations would include identifying the attitudinal differences between the sexes, and expanding the presentation to address these differences.

Speculation about the successful delivery of AIDS education would also include trials with male-to-male and female-to-female presentations. Same-sex presentations might provide a more comfortable atmosphere in which to discuss situationally specific problems in intimate relationships. Same-sex presentations might also provide a way in which faulty reasoning about gender roles and responsibilities could also be corrected.

Recommendations

The information collected in the data gathering stage of this project supports the continuation and expansion of the program presented to the participants in this study (Appendix D). The questionnaire's usefulness in identifying

the participants' misconceptions about the spread and prevention of AIDS, and as a baseline from which discussion can be stimulated, supports extending its administration to larger groups. As such, it should be adopted for use by all the community colleges in Maryland.

The results of this study support recommendations for wider distribution and administration of the questionnaire. Although the sample size in the study was considerable, the number of students who took part in the program was small in comparison to the number of students at each community college. All students should have an opportunity to learn about the spread and prevention of AIDS.

The results of this study would also support recommendations for the development of other AIDS educational programs. Furthermore, enrollment in some form of AIDS-education program should not be limited to willing participants. Instead, all matriculating students should be required to participate in some form of seminar specifically designed to present AIDS-related information. These programs should be independent of the student's declared major or special interests.

The program presented in this project was designed to provide community college students in Maryland with accurate information about the spread and prevention of AIDS and HIV. New programs should be organized to reflect changing information about the spread and prevention of AIDS. New

programs must also address psychosocial issues and change stereotypical notions about AIDS' transmission. Ideas about AIDS' threat to marginalized groups only, are no longer valid. AIDS has crossed all age, race, and gender barriers.

One further suggestion for future research should be considered. A follow-up procedure to track the students exposed to AIDS education programs would be useful on several levels. The students opinions about the presentation and its applicability would provide a valuable resource for new programs. Research about whether or not the students have changed their behaviors as a result of the information presented would provide insight into the value of the program. The value of the program rests on the reduction of omnipotent attitudes and on behavioral change.

Diffusion of the Results

The present study was conducted in cooperation with the Youth Outreach Division of the AIDS Administration of Maryland. It was designed as a special project for the Department of Health and Mental Hygiene of the State of Maryland. Practical application of the study will entail diffusion in several ways.

The report presented to the Youth Outreach Division will be used to recommend or develop strategic plans for disseminating AIDS-related information to college students in Maryland. The results of this study will also be

presented through publications and workshops at local and national levels.

Each participating community college will receive a copy of the questionnaire and the answers to the questions. The colleges will also be given selective demographic data about their institutions and aggregate data about state-wide distributions. As such, the report will be useful for health guidelines within and between the schools. It will also provide each college with a way in which to develop independent program planning based upon student needs.

The emphasis of this study, however, was always on its participants. It was hoped that access to accurate information would help the students recognize the differences between safe versus risky behaviors, and the impact of these behaviors on the risk of AIDS infection.

This study was intended as a first-step in providing other educators with a method for conducting successful AIDS education programs. Higher education has the resources to provide some remedy for this epidemic. Even when controversial, these systems cannot afford to abdicate their responsibilities to present accurate information. The basic tenet of higher education is preparation for the future. Lack of information about the AIDS epidemic threatens the futures of the students who move through these institutions and, as such, the institutions through which they move.

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APPENDIX A

COMMUNITY COLLEGE RESOURCES

Contact Persons and Instructors

ALLEGANY COMMUNITY COLLEGE, Cumberland, Maryland
Contact Persons:
Dr. Gene Hall, Vice-President for Instructional Affairs
E. Lowell Markey, Dean of Student & Adm. Services
Instructor:
Tim Rowan, Program Director for Human Resources

ANNE ARUNDEL COMMUNITY COLLEGE, Arnold, Maryland
Contact Persons:
James S. Atwell, Vice-President Academic Affairs
Skip Brown, Chairperson, Health, Phys. Ed. & Recreation
Instructor:
Don Ross

NEW COMMUNITY COLLEGE OF BALTIMORE, Baltimore, Maryland
Contact Persons:
Dr. Barbara Farr
Raymond Yannuzzi, Assistant to the Vice-President
Candice Lucas, Secretary to the President
Instructors:
Mary Yannuzzi
Dr. Stanley Mazer

CATONSVILLE COMMUNITY COLLEGE, Catonsville, Maryland
Contact Persons:
James J. Linksz, Dean of Instruction
Dr. Gary Kaiser, AIDS Education Task Force
Instructors:
George Lavry
Shirley Simon

CECIL COMMUNITY COLLEGE, North East, Maryland
Contact Person:
Rosemary Castelli, Assistant Dean for Student Services
Instructor:
Karen Edwards

CHARLES COUNTY COMMUNITY COLLEGE, LaPlata, Maryland
Contact Person:
Michelle Brosco, Public Relations Officer
Instructors:
Harriet Taylor
Dr. Patrick Allen

CHESAPEAKE COLLEGE, Wye Mills, Maryland
Contact Persons:
Cynthia N. Buniski, Associate Dean Adm. Services
Dr. John J. Cistriano, Associate Dean Applied Studies
Instructor:
Mercedes Lesser

DUNDALK COMMUNITY COLLEGE, Dundalk, Maryland
Contact Person:
Cindy Peterka, Director of Counseling
Instructor:
David Agger

ESSEX COMMUNITY COLLEGE, Essex, Maryland
Contact Person:
Dr. Al Marchello, Department Chairperson, Psychology
Instructors:
Ron Gompf
Joyce Rochlin
Richard Oliver

FREDERICK COMMUNITY COLLEGE, Frederick, Maryland
Contact Person:
L. Richard Haney, Dean of Student Development
Instructor:
Virginia Steib

GARRETT COMMUNITY COLLEGE, McHenry, Maryland
Contact Person and Instructor:
Ann Wellham

HAGERSTOWN COMMUNITY COLLEGE, Hagerstown, Maryland
Contact Persons:
Dr. Vaughn Crowl, Chairperson, Beh. and Social Sciences
Michael H. Parsons, Dean of Instruction
Instructor:
Marlys Palmer

HARFORD COMMUNITY COLLEGE, Bel Air, Maryland
Contact Person:
Norma R. McDonald, Acting Dean, Arts and Sciences
Instructor:
Richard Fordyce

HOWARD COMMUNITY COLLEGE, Columbia, Maryland
Contact Persons:
Ellen L. Jenkins, Assistant Board Secretary
Mark Canfield, Vice-President, Dean of Instruction
Instructor:
Linda L. Johnston

MONTGOMERY COMMUNITY COLLEGE, Germantown, Maryland
Contact Persons:
Bill Campbell, Office of Planning & Inst. Research
Dr. Ruth Garies, (Rockville)
Dr. Lee Glover (Takoma Park)
Dr. David Kieffer (Germantown)
Instructor:
John Kreissig (Germantown)

PRINCE GEORGE'S COMMUNITY COLLEGE, Largo, Maryland
Contact Persons:
Dennis S. Bartow, Dean of Instruction
Richard C. Hardwick, Executive Assistant to President
Instructor:
Dr. Alan Schultz

WOR WIC TECH COMMUNITY COLLEGE, Salisbury, Maryland
Contact Persons:
Dr. Diane Lesser, Social Sciences
Dr. Stephen L. Capelli, Dean of Instruction
Instructor:
Mary Dale Craig

APPENDIX B

SURVEY INSTRUMENTS

SEX _____ AGE _____ RACE _____ MARITAL STATUS _____

1. Have you ever had a sexually transmitted disease? Yes___ No___
2. Have you ever used drugs intravenously? Yes___ No___
3. Have you ever been tested for AIDS or HIV? Yes___ No___
4. Have you ever had a homosexual experience? Yes___ No___
5. Are your present sexual preferences homosexual? Yes___ No___
6. Would you consider yourself bisexual? Yes___ No___

7. In the last year, have you been sexually involved with
   - _____ No one
   - _____ 1 Partner
   - _____ 2 - 5 partners
   - _____ 6 - 10 partners
   - _____ More than 10 partners

8. How have you gotten most of your information about AIDS?
   (Please Check Only One)
   - _____ My parents
   - _____ My friends
   - _____ School
   - _____ Television, Radio or Newspapers
   - _____ Other (please specify)

9. Has the AIDS virus changed your attitudes toward homosexuals?
   - _____ Yes, more sympathetic
   - _____ Yes, more adversarial
   - _____ No

10. Has the AIDS virus changed your attitudes toward drug users?
    - _____ Yes, more sympathetic
    - _____ Yes, more adversarial
    - _____ No

11. How many times have you used a condom in the last year?
    - _____ Always
    - _____ About half the time
    - _____ Never
    - _____ Have not been sexually active in the last year

12. How would you rate yourself about the spread and prevention of AIDS?

I know very little 1 2 3 4 5 6 7 8 9 10 I am very knowledgeable

(Please Circle Only One Number)

(Cover Sheet)

WHAT I KNOW ABOUT THE AIDS VIRUS

Please Indicate Whether You Think the Following Statements are True or False

The Epidemic:
T F - The number of HIV carriers in the U.S. is available.
T F - The symptoms of people with HIV or AIDS are always the same.
T F - Women have a greater natural immunity to AIDS.
T F - A person who has HIV can look well and feel healthy.
T F - Average costs for an AIDS patient exceed $50,000 a year.
T F - It can take five years or more for AIDS to develop.
T F - I do not believe that the government has been completely honest about issues surrounding AIDS.

How You Get AIDS:
T F - AIDS is caused by a virus.
T F - AIDS is more contagious than the common cold.
T F - You can get AIDS from an unsterilized tattoo needle.
T F - The AIDS virus thrives in heroin.
T F - AIDS is caused by bacteria.
T F - AIDS is more contagious than measles.
T F - It is my responsibility to find out about my partner's past sexual experiences.

Who Gets AIDS:
T F - Hospitals are required to protect health care workers.
T F - People who get blood can get AIDS.
T F - Most homosexuals have AIDS.
T F - People have been infected with AIDS by mosquito bites.
T F - People who give blood can get AIDS.
T F - People who are Black or Hispanic are more susceptible to HIV and AIDS.
T F - A recent negative blood test is proof that a person is not an HIV carrier.

Sexual Behavior:
T F - You can get AIDS more easily through anal than vaginal sex.
T F - A natural condom is the best device to use for protection.
T F - A latex condom is the best device to use for protection.
T F - Abstinence is the only sure way to prevent getting AIDS.
T F - You can get AIDS through sex even though you are only having sex with one partner.
T F - Spermicidal gel used with a condom adds protection against AIDS.
T F - I am solely responsible for protective measures when engaging in intimate behaviors.

Personal Beliefs:
T F - People who have AIDS should pay their own medical costs.
T F - I favor compulsory HIV/AIDS testing for everyone in the U.S.
T F - I would feel very uncomfortable around someone with AIDS.
T F - I would touch someone who has HIV or AIDS.
T F - I think all doctors and dentists should treat AIDS patients.
T F - I know someone with AIDS or HIV, the virus that causes it.
T F - I have always been completely honest about my past sexual experiences.

(Form A)

WHAT I KNOW ABOUT THE AIDS VIRUS

Please Indicate Whether You Think the Following Statements are True or False

The Epidemic:

T F - The number of HIV carriers in the U.S. is available.
T F - Women have a greater natural immunity to AIDS.
T F - A person who has HIV can look well and feel healthy.
T F - Average costs for an AIDS patient exceed $50,000 a year.
T F - I do not believe that the government has been completely honest about issues surrounding AIDS.

How You Get AIDS:

T F - AIDS is more contagious than the common cold.
T F - The AIDS virus thrives in heroin.
T F - AIDS is caused by bacteria.
T F - AIDS is more contagious than measles.
T F - Three primary transmission routes for AIDS are at-risk sexual behaviors, intravenous drug use, and blood products.

Who Gets AIDS:

T F - Hospitals are required to protect health care workers.
T F - Most homosexuals have AIDS.
T F - People have been infected with AIDS by mosquito bites.
T F - People who are Black or Hispanic are more susceptible to HIV and AIDS.
T F - A recent negative blood test is proof that a person is not an HIV carrier.

Sexual Behavior:

T F - You can get AIDS more easily through anal than vaginal sex.
T F - A natural condom is the best device to use for protection.
T F - Abstinence is the only sure way to prevent getting AIDS.
T F - Spermicidal gel used with a condom adds protection against AIDS.
T F - I am solely responsible for protective measures when engaging in intimate behaviors.

Personal Beliefs:

T F - I favor compulsory HIV/AIDS testing for everyone in the U.S.
T F - I would feel very uncomfortable around someone with AIDS.
T F - I think all doctors and dentists should treat AIDS patients.
T F - I know someone with AIDS or HIV, the virus that causes it.
T F - I have always been completely honest about my past sexual experiences.

(Form B)

APPENDIX C

TITLES OF THE PAMPHLETS DISTRIBUTED TO THE STUDENTS

Pamphlets and Resources

About AIDS and Shooting Drugs. South Deerfield, Ma: Channing L. Bete Co., Inc., 1991.

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You Don't Have to be White or Gay to Get AIDS. Baltimore, MD: Health Education Resource Organization, Fall, 1988.

APPENDIX D

PRESENTATION OF THE PROGRAM

Presentation Of The Answers To The Questionnaire

The purpose of this program is to present AIDS-related information to college students. Its goal is an open forum where the students can explore their conceptions and misconceptions about the spread and prevention of AIDS.

The intent of the program is not the rote recitation of the answers to the questions. It is, instead, a program conceptualized as being bidirectional between the presenter and the participants.

The State of Maryland and private agencies have many publications they are willing to share. These pamphlets, and spermicidal condoms are available free of charge. Some suggested sources for information would be:

AIDS Administration of Maryland (301) 945-2437
HERO (301) 945-2437
Baltimore Urban League (301) 523-8150
Network Publications (408) 438-4080 (California)
National AIDS Hotline 1-800-342-2437

The Questionnaire

Although a questionnaire has been developed to address salient issues about AIDS and HIV, its validity will always be suspect. The purpose of the questionnaire is to stimulate discussion and provide current information about the disease. As such, it should be viewed as an instrument intended to change as a function of new ideas and new information.

Presenting The Program

The presenter should have some knowledge about current AIDS research, and be familiar with the etiology and epidemiology of the disease. When presenting the program, the answers to some questions may be unavailable to the presenter. When the answer to a question is not available, an appropriate resource for the information should be suggested.

While several questions can be answered with one sentence, others require the dissemination of considerably more information. The amount of student participation will affect the time required to complete the program and its pace.

The program begins with the last questions on the questionnaire. Pilot studies have indicated that these questions stimulate more discussion than the questions in the other four sections.[1]

Questions About Personal Beliefs

The AIDS epidemic has been accompanied by intensely negative public reactions to persons presumed to be infected with the disease. It has also been suggested that the development of an AIDS-related stigma may be an epidemic in itself.[30]

PEOPLE WHO HAVE AIDS SHOULD PAY THEIR OWN MEDICAL COSTS. A large segment of our population believe that the

medical costs associated with HIV and AIDS infection should be born by the infected person.

Annual medical costs of AIDS and ARC have been estimated to be two-to-four billion dollars.[31] These costs have risen primarily due to the costs of AZT, the leading drug resource for AIDS patients. Government contributions are now being made available toward the cost of being an AZT recipient.

I FAVOR COMPULSORY HIV/AIDS TESTING FOR EVERYONE IN THE U. S. Both voluntary and mandatory testing are sensitive issues influenced by psychological denial and societal stigma. Testing creates a legal conflict between an individual's right to autonomy and society's right to control the public health.[32] The issue of AIDS testing presents an interesting paradox. Most individuals who favor compulsory testing have not been tested for the disease.

I WOULD FEEL VERY UNCOMFORTABLE AROUND SOMEONE WITH AIDS. I WOULD TOUCH SOMEONE WHO HAS HIV OR AIDS. Negative attitudes affect the willingness of most people to interact with AIDS and HIV patients.[33]

I THINK ALL DOCTORS AND DENTISTS SHOULD BE REQUIRED TO TREAT AIDS PATIENTS. The American Medical Association supports access to health care and nondiscrimination toward HIV or AIDS infected individuals. This question addresses the right to treatment for illnesses independent of AIDS or HIV infection.

I KNOW SOMEONE WITH AIDS OR HIV, THE VIRUS THAT CAUSES IT. The presentation of this program has shown increases in the number of affirmative answers to this question over time. Based upon the statistical inferences for AIDS and HIV, while very few people knew someone with the disease last year, most people will know someone with the disease next year.

I HAVE ALWAYS BEEN COMPLETELY HONEST ABOUT MY PAST SEXUAL EXPERIENCES. People lie to have sex.[16] These lies can be innocuous little white ones, to deadly deceits about past encounters and former partners.

Questions About The Epidemic

Acquired Immune Deficiency Syndrome (AIDS) was a disease first recognized in 1981. In 1981, the Centers for Disease Control reported five cases of a rare pneumonia in gay men. The commonality of this pneumonia was severe immune system impairment without obvious cause. Since that time, considerable progress has been made in defining and treating the disease.

However, several confounding effects about the incidence of AIDS still exist. Mutations of the virus have resulted in new AIDS cases that have not conformed to previous stereotypes. Virological inconsistencies and statistical uncertainties have also impacted upon predictions about AIDS.[2]

Epidemiologic data have shown that HIV infection was present in Central Africa as early as the 1960's. It is now believed that HIV was introduced into the United States in the early 1970's, eleven years before the first reported case of the disease. The disease is an irreversible immune system dysfunction that encourages opportunistic infections and rare malignancies.

AIDS evolves through two phases of infection, Human Immunodeficiency Virus (HIV), and AIDS Related Complex (ARC). HIV is the virus that causes AIDS, and ARC signals the onset of immune system impairment. The occurrence of AIDS is the final manifestation of HIV's progression. AIDS is invariably a fatal disease. Once AIDS is diagnosed, the average life expectancy of an infected adult is one year.

THE NUMBER OF HIV CARRIERS IN THE U. S. IS AVAILABLE. It is now estimated there will be 365,000 AIDS patients in the United States by 1992.[3] To date, 250,000 people have died or about to die because of AIDS. It should also be noted that these statistical inferences are for people already infected with the AIDS virus and do not include HIV carriers. It is now estimated that 1.5 million individuals in this country could be HIV carriers by 1992.

It has also been reported that these cases are now doubling about once every two years.[4] Comparisons between population prevalences of AIDS to empirical HIV data, have projected over one million total infections in the United

States.[5] By 1991, 171,000 individuals in Maryland will be HIV seropositive.[6]

Suggestions for statistical and demographic resources:

HIV/AIDS Surveillance
National AIDS Information Clearing House
P. O. Box 6003
Rockville, Maryland 20850
Published by: U. S. Dept. of Health & Human Services Centers for Disease Control

Maryland AIDS Update
201 W. Preston Street
Baltimore, Maryland 21201
Published by: Maryland Dept. Health & Mental Hygiene The AIDS Administration-AIDS Surveillance

THE SYMPTOMS OF PEOPLE WITH HIV OR AIDS ARE ALWAYS THE SAME. A person can be infected with AIDS without showing any symptoms.[7] Clinical manifestations of the AIDS virus may present no symptoms and apparent health, or severe symptoms and rapid death from one or more lethal tumors or infections.[8]

WOMEN HAVE A GREATER NATURAL IMMUNITY TO AIDS. The national ratio for HIV is about three males to one female.[9] In some areas, the virus is equally present in males and females. In Maryland, more women then men have been diagnosed HIV positive since January, 1990.[10]

As the number of HIV infected women continues to grow, so do the chances for producing HIV infected babies. More than forty percent of HIV positive, pregnant women will pass the disease on to their children through perinatal transmission.[11] Whether the mother's individual rights

supersedes the rights of the unborn child, is a dilemma requiring resolution.

The rate of infection for black women is nine times that for white women.[12] If present trends continue, AIDS will be one of the five leading causes of death for women of reproductive ages.

A PERSON WHO HAS HIV CAN LOOK WELL AND FEEL HEALTHY. Infected individuals can feel fine and look well. Two effects compound HIV's threat. First, the length of time HIV lies dormant in the infected individual contributes to the potential for third-party infection. Next, unless tested for HIV, an individual who has no cause to suspect infection would be completely unaware of being infected.

AVERAGE COSTS FOR AN AIDS PATIENT EXCEED $50,000 A YEAR. The financial costs of AIDS are prohibitive. Medical costs for AIDS patients are not limited to physicians, drugs, laboratory tests or hospital stays. AIDS patients affect their families financially, emotionally and spiritually. The disease deprives society of its most productive members.

IT CAN TAKE FIVE YEARS OR MORE FOR AIDS TO DEVELOPE. It is now estimated that 9.8 years can elapse between infection and the manifestation of AIDS' symptoms.

I DO NOT BELIEVE THAT THE GOVERNMENT HAS BEEN COMPLETELY HONEST ABOUT THE ISSUES SURROUNDING AIDS. The Centers for disease control has associated HIV with blood,

semen, saliva, tears, breast milk, and urine.[13] Implications for infection are also dependent upon the recipient of bodily fluids from an infected individual. As different modes of HIV transmission surface, the credibility gap between what the public is being told and what information it should have, grows wider.

The federal government has been nearly refractory in its response to calls for concrete messages about AIDS.[14] Other countries began distribution of general information within months of AIDS' identification. The United States responded seven years after the onset of the epidemic.

This federal delay was based on the premise that public health was within local and state government domains. Although many local initiatives have been successful, the resources available to all states are not the same. This differential access to funding has created unequal access to information about the spread and prevention of AIDS.

Questions About The Transmission of AIDS

Today, the leading causes of HIV acquisition are blood products, intravenous drug use, and sexual contact. These causes have been exacerbated by tainted blood, needle sharing, and at-risk sexual behaviors.

AIDS IS CAUSED BY A VIRUS. AIDS IS CAUSED BY BACTERIA. The disease AIDS is caused by the Human Immunodeficiency Virus (HIV). Once infected with HIV, the body's immune

system is destroyed and the body cannot defend itself from illness.[15]

AIDS IS MORE CONTAGIOUS THAN THE COMMON COLD. AIDS IS MORE CONTAGIOUS THAN MEASLES. AIDS is acquired. It is not inherited, nor does it spread by travelling trough the air. AIDS is not caused by parasitic invasions. Unlike measles or the common cold, AIDS is not transmitted through casual contact.

YOU CAN GET AIDS FROM AN UNSTERILIZED TATTOO NEEDLE. THE AIDS VIRUS THRIVES IN HEROIN. The AIDS virus does not thrive in heroin. It is not passed on by the drug, but by the paraphernalia of the drug user. Exposure to an unsterilized tattoo needle would be analogous to sharing needles for intravenous drug use. If the original user was infected with AIDS or HIV, the next user is vulnerable to infection.

It is now estimated that as much as one-third of the intravenous drug use population could be HIV infected.[15] The combination of an addicted individual's potential for infection, and his or her sexual interactions, have contributed to the spread of HIV.

IT IS MY RESPONSIBILITY TO FIND OUT ABOUT MY PARTNER'S PAST SEXUAL EXPERIENCES. Each partner in an intimate relationship has the responsibly for his or her own protection. This protection should include the use of

proper prophylactic measures and some knowledge of one's partner's background.

Prophylactic measures can be easily implemented. However, the intimacy of the moment many not be conducive to honest or forthright disclosures about other experiences. Many individuals put their partners at risk by lying about their past sexual experiences.[16]

WHAT ABOUT KISSING? Although this question does not appear on the questionnaire, it is raised in most discussions about AIDS. Its exclusion was the result of contradictory reports about HIV transmission routes.

The likelihood of being infected with HIV through salivary transmission has been publicized as insignificant. While other behaviors have stronger correlations to HIV transmission, salivary transmission should not be ignored. Several recent studies have implicated salivary transmission and oral sex as routes for HIV infection. [17]

Questions About At-Risk Populations

HOSPITALS ARE REQUIRED TO PROTECT HEALTH CARE WORKERS. Hospitals are not required to protect health care workers.[18] Neither physicians nor health care workers have special immunities for the disease. Current estimates link 469 physicians and 2,586 health care workers to AIDS infection. [19]

PEOPLE WHO GET BLOOD CAN GET AIDS. PEOPLE WHO GIVE BLOOD CAN GET AIDS. People who give blood cannot get AIDS, unless the syringe has been infected and has not been sterilized. People who get blood can get AIDS.

Although the risk of getting AIDS through blood transfusions has lessened, the fate of recipients of tainted blood is still to be ascertained.[20] In 1985, HIV screening in blood banks was initiated. Although it is not known how much of the pre-1985 blood was actually distributed, its availability has created a higher risk for HIV infection.

New research has also indicated an alarming prospect about the effect of needle-changing on the contamination of syringes and I. V. tubing.[21] It has been shown that even when needles were changed, thirty-four percent of the syringes tested positive for blood. These findings have important implications for blood donors, and health care workers. Using a disposable needle is no guarantee that the syringe has not been infected.

MOST HOMOSEXUALS HAVE AIDS. Most homosexuals do not have AIDS. However, because of AIDS' association with this group, homosexuals have been the primary target of the suspicions and prejudices of the heterosexual population. The appearance of more heterosexual than homosexual/bisexual cases of AIDS is now the predicted epidemiology of the disease.[22]

Bisexuality has posed a serious problem for AIDS researchers.[23] Because bisexuality transcends all categories of sexual interaction, no singular model of transmission can be developed.

PEOPLE HAVE BEEN INFECTED WITH AIDS BY MOSQUITO BITES. AIDS is not spread by mosquito bites, bed bugs, lice, flies or other insects.[24]

PEOPLE WHO ARE BLACK OR HISPANIC ARE MORE SUSCEPTIBLE TO HIV AND AIDS. Blacks and Hispanics are not more susceptible to AIDS. However, AIDS has been disproportionately affecting the nonwhite population. Racial skews have been supported by several effects. Socioeconomic background, lack of knowledge about the spread and prevention of AIDS, and the greater number of at-risk behaviors practiced, have all contributed to the vulnerability of these populations.

A RECENT NEGATIVE BLOOD TEST IS PROOF THAT A PERSON IS NOT AN HIV CARRIER. A recent negative blood test is not proof that a person is not an HIV carrier. The human body needs approximately three to six months to make antibodies. A person incubating HIV within this period would not test positive for the disease.

YOUNG PEOPLE. Concern has been rising about the number of adolescent carriers. Although adolescents' knowledge about AIDS has increased, their attitudes and beliefs have not been radically altered.[25] The Centers for Disease

Control has indicated that two out of every thousand college blood samples tested are infected with HIV.[26]

Exploratory behavior, the need for social approval, and a sense of invulnerability increases the risk of HIV for young people.[27] The amount of unsafe sex taking place on college campuses may also be masked through self-reports about dating patterns and HIV risk behaviors.

Questions About Sexual Behavior

YOU CAN GET AIDS MORE EASILY THROUGH ANAL THAN VAGINA SEX. An individual is more susceptible to AIDS through anal intercourse.

YOU CAN GET AIDS THROUGH SEX EVEN THOUGH YOU ARE ONLY HAVING SEX WITH ONE PARTNER. Having sex with only one partner at a time is not the same as exclusive interactions with one noninfected partner. The idiom that a person is sleeping with everyone his or her partner has every slept with, accurately describes the potentially deadly consequences associated with selecting a sexual partner.

It has also been shown that the probability of transmission is essentially independent of the number of partners.[28] Each sexual interaction poses the same potential for infection.

For some individuals, definitions about monogamy may be related more to the relationship then the life span. Being monogamous this year with a current partner, then next year

with another, is not the same as being monogamous with only one partner.

ABSTINENCE IS THE ONLY SURE WAY TO PREVENT GETTING AIDS. Neither exclusivity nor abstinence is a sure way of preventing AIDS. False perceptions about monogamy and abstinence may lead to the false assumption that one is safe from sexually transmitted diseases.

Although abstinence would be a sure way of preventing AIDS through intimate contact, it is not a sure way of preventing AIDS. The roles of intravenous drug use, blood exchanges, and lack of knowledge about at-risk behaviors are all equally responsible for the spread of AIDS and HIV.

A NATURAL CONDOM IS THE BEST DEVICE TO USE FOR PROTECTION. A LATEX CONDOM IS THE BEST DEVICE TO USE FOR PROTECTION. SPERMICIDAL GEL USED WITH A CONDOM ADDS PROTECTION AGAINST AIDS. A natural condom offers almost no protection against HIV infection. A latex condom used with a spermicidal gel offers the best protection against HIV transmission.

The most commonly cited reasons for not using condoms are:

1. The number of sexual partners.
2. Difficulties in discussing condom use with partners.
3. Condoms reduce sensitivity.
4. Purchasing a condom is embarrassing.
5. Women are taking oral contraceptives.

Many individuals also cite their reluctance to pause during sexual encounters. To be effective, condoms must be

used before to having sex, not during it. Pre-ejaculatory fluids pose the same threat for infection as full ejaculation.

I AM SOLELY RESPONSIBLE FOR PROTECTIVE MEASURES WHEN ENGAGING IN INTIMATE BEHAVIORS. Most students are aware of the recommended precautions about AIDS. However, unless the threat of infection is personalized, most students believe themselves to be immune to infection, and are reluctant to change their sexual behaviors.[29]

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"Classroom Texts: An Investigation of the Correlative Features of Assigned Reading and Test Performance."

"The Development of a Questionnaire to Survey College Students' Misconceptions about the Spread and Prevention of AIDS."

"Experiencing an Epidemic: A Seminar Designed to Explore the Spread and Prevention of the AIDS Virus."

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171